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APRIL, 1898.

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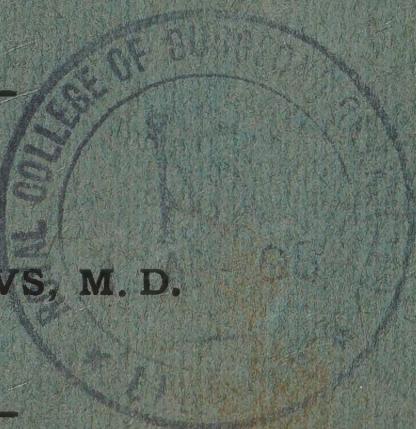
MATHEWS'  
QUARTERLY JOURNAL  
—OF—  
Rectal and Gastro-Intestinal  
Diseases

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EDITED BY

JOSEPH M. MATHEWS, M. D.



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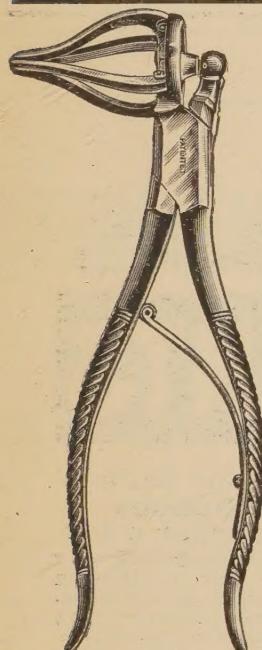
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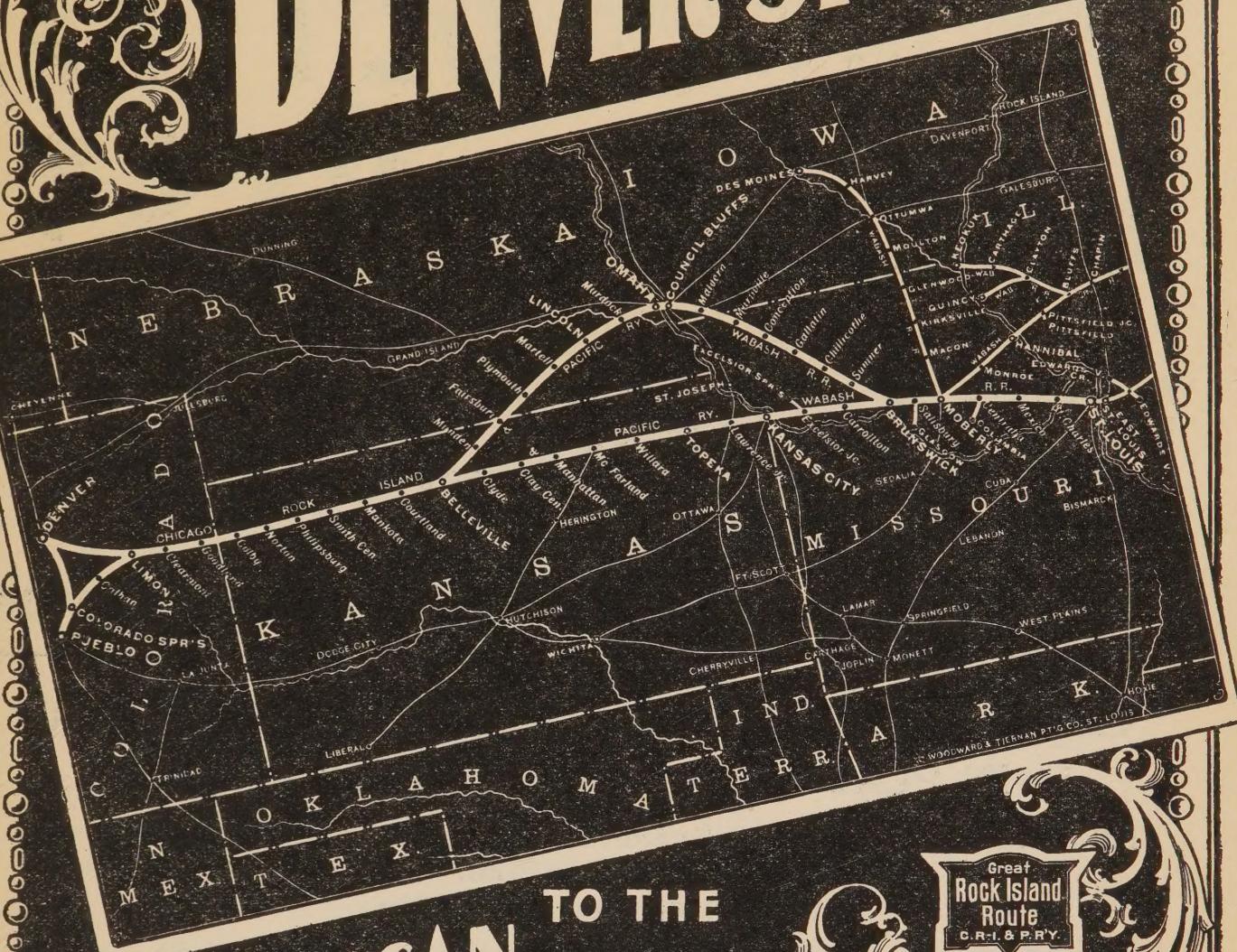
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—OF—

## RECTAL AND GASTRO-INTESTINAL DISEASES.

"ALIS VOLAT PROPRIIS."

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Vol. V.

APRIL, 1898.

No. 2.

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### Original Contributions.

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#### URETHRO-RECTAL FISTULA: A NEW OPERATION, WITH REPORT OF THREE SUCCESSFUL CASES.

BY JAMES P. TUTTLE, M. D.,  
NEW YORK CITY, U. S. A.

The barrenness of medical literature upon the subject of urethro-rectal fistula is well shown in the following sentence in a letter from a prominent surgeon, written shortly after my first report upon this subject in December last. He says: "I find little in the books or journals upon this subject to enlighten, and less to encourage me in the treatment of this condition."

Van Buren and Keyes, Bumstead and Taylor, Otis, Finger, and Milton do not mention the subject, so far as I can find. Duplay has written more upon the subject than any other author. Theoretically he has covered the ground quite thoroughly, but his advices with regard to treatment have failed to stand the test of practical application. White and Martin, in their recent works on genito-urinary diseases, have discussed the subject and given two methods for operation which appear to be feasible, but neither author, so far as I can learn, has put them to a test. Sir Henry Thomson seems to have seen a number of cases, but frankly confesses that he has never cured any, save one, and that by posture in the act of urination. He has benefited other cases by operative and local treatment, as have other surgeons, but so far as I can find there are only six cases reported in medical

literature in which a chronic urethro-rectal fistula has been radically cured. Most of these successes have been obtained after two or more attempts.

The cases are no doubt rare, but not so much so as one would conclude from what is written on the subject. I have heard unofficially of no less than seven cases, only one of which had been cured, since reporting my first case. The condition consists in a fistulous tract between the urethra and the rectum.

The term urethro-rectal has been selected in preference to recto-urethral, because it expresses more nearly the nature of the disease, inasmuch as the condition generally originates in the urethra, and the urine escapes into the rectum much more frequently than do the intestinal contents into the urethra. This is not due to the course of the fistula, but to the size of the tract and the nature of the contents. Duplay says these fistulæ always run downward and backward from the urethra, a statement which is neither corroborated by any other author nor borne out by facts. In my second case it will be seen the fistula extended from the rectum downward and forward into the urethra. As the history would indicate, this particular fistula probably originated in the rectum, and this leads to the thought that the course of the tract may bear some relation to its origin. No observations have been made upon this point, however, and were it established, I do not think it would be of any practical value.

*Classification and Pathology.* Urethro-rectal fistulæ may be classified, according to their causes, into traumatic and pathological.

*Traumatic.* The most frequent cause of these is cutting or tearing into the rectum during operations upon the urethra, the prostate, or for stone. Fortunately, these cases generally heal simultaneously with the perineal wound, owing to the free drainage of urine from the deep urethra through the incisions in it, and it was this very fact which first led me to introduce this feature into the operation which I shall have the pleasure to present.

The forcible pushing of sounds through the urethral walls and into the rectum is also a cause of fistula between these two organs. In such cases it would be impossible for the tract to extend in any other general direction than upward and back-

ward from the urethra. It is not necessary for the sound to be passed completely through the rectal wall in order to produce a fistula of this nature. If it but tear the urethral wall and open a tract for extravasation of urine into the septum dividing the rectum and the urethra, the ulceration or abscess which follows will most likely break into the rectum as the point of least resistance compared with the dense tissues of the perineum.

In like manner internal urethrotomy or divulsion in the membranous or prostatic portion may result in urethro-rectal fistula through extravasation of urine and consequent abscess, especially if the incision should be made in the floor of the urethra.

The passage of foreign bodies, such as pins, needles, catheters, pipestems, or fish-bones from the rectum into the urethra, or *vice versa*, may also be classed among the traumatic causes of urethro-rectal fistula, although I am not aware of any authenticated case from such a source. Traumatisms of the perineum causing sloughs, impaling upon sharp instruments, the horn of a bull, for example, and too deep burning with the cautery in Van Buren's operation for prolapsus of the rectum, may all cause fistula between the rectum and urethra.

*Pathological.* Cancers of the rectum or prostate may, by their extension and sloughing, result in urethro-rectal fistulæ. This generally happens in the later stages of the disease, after operative procedure is inadmissible. In such cases only palliation can be attempted, and it is a question if any surgical interference is superior to the free use of morphine.

These cases generally resolve themselves into vesico-rectal fistulæ. Owing to a relaxed state of the vesical sphincter, incontinence supervenes and the victims are pitiable indeed. The pathology is not different from that of non-complicated cancer of the rectum and prostate, and need not be entered into here.

Ulceration of the rectum, either simple, tubercular, or syphilitic, may result in this form of fistula by direct extension or by the formation of a burrowing abscess which eventually breaks into the urethra. It is rarely, however, that these fistulæ originate on the rectum. Burrowing tracts, or blind internal fistulæ, as they are commonly called, generally tend toward a cutaneous surface either at the side of, posterior to, or at some point remote

from the rectum. When abscesses originating from the rectum occur between the levator ani and perineal fascia they may almost completely surround the urethra and yet not break into it, owing to the fact that its walls, lying in contact, present no cavity to be invaded, and the denseness of its tissues offers a greater resistance than the peri-urethral tissues. Such abscesses either open into the rectum or upon the surface. If they are incised early in their course they heal kindly without invading either of the organs here concerned. In tubercular ulceration of the rectum the prostate gland is almost always involved in the pathological process, and it is a question then, whether the disease extends from the rectum to the urethra, or from the latter to the former.

*Diseases of the Urethra and Prostate*, however, are the causes of a large majority of urethro-rectal fistulæ.

Stricture, with posterior ulceration, is perhaps the most frequent in its causation. The ulceration furnishes a gap for the leakage of urine, and the stricture, by obstruction to the flow, forces this fluid out into the peri-urethral tissues at each act of micturition. This urine decomposing, irritates the tissues, and pyogenic bacteria entering from the urethra produce suppuration and abscesses, which burrow in the direction of least resistance and consequently open frequently into the rectum, if indeed they are not incised or broken through by digital examination of this organ. Such abscesses have been opened through a perineal incision and then cut through into the rectum as for rectal fistula, the surgeon discovering later that it was of urinary origin and not at all connected with the posterior organ. It is a fatal mistake ever to cut into the rectum from an abscess involving the recto-urethral septum until a pathological opening into that organ has been clearly demonstrated. It is also a serious error to open any abscess anterior to the rectum through that organ. However deeply situated, it should be evacuated through perineal dissection, and thus avoid the dangers of urethro-rectal fistula and intractable rectal ulcer. The point of extravasation and consequently the urethral opening of these fistulæ may be anywhere between the compressor urethræ muscle and the neck of the bladder; it is generally in the prostatic portion, however, and on one side or the other of the veru montanum.

Abscesses of the prostate, whether simple, gonorrhreal, or tubercular, may result in this form of fistula. The capsule of this gland will necessarily prevent much burrowing, and abscesses in this position will point directly backward toward the rectum. They break most frequently into the urethra, but even after this they may invade the intestinal canal through inflammation and sloughing of the posterior wall. If they open first, as they rarely do, into the rectum, urethro-rectal fistulæ will almost invariably result. The danger of opening such abscesses through the rectum, as is advised by some surgeons, is so apparent that it need not be discussed. The same remarks apply to these as have been made concerning urinary phlegmons. Sir Henry Thomson says that these prostatic abscesses are the most frequent cause of urethro-rectal fistulæ. Fourgue (White and Martin, 963) says that 43 in 67 cases of prostatic abscesses opened into the rectum, and in 21 of these pus was discharged by both rectum and urethra. If such be the case, it is surprising that we do not meet with urethro-rectal fistula much more frequently than we do. These abscesses may not only break into the two canals, but at the same time, to further complicate matters, there may be a perineal opening or tracts leading off to the ischio-rectal fossa and opening at points more or less remote upon the thigh or belly. In the list below, one such case is reported. White and Martin say: "The main tract, starting from a prostatic or peri-prostatic abscess cavity, has often many diverticula, forming blind, suppurating sinuses." Such sinuses might be very misleading to one not accustomed to deal with these conditions, and lead to operations which will do more harm than good. It will be well, therefore, to bear them in mind.

Calculi of the prostatic or membranous urethra, or those developing in the prostate gland itself, may be the exciting cause of recto-urethral fistula. In the first two varieties the fistula generally results from the wall of the urethra being cut through by the sharp projections of the calculus or ulcerated from pressure, the subsequent extravasation of urine proceeding as the active cause, just as in ulceration from stricture. In the latter variety the fistula may occur from the cutting into either or both canals by the calculus and the consequent suppuration therefrom. I have seen one case in which the stone had cut

through the urethra and was almost through the rectal wall. A timely operation through the perineum removed the calculus and averted an otherwise inevitable fistula.

Congenital urethro-rectal fistulæ have been observed a number of times. These, however, are not true fistulæ, but malformations, in which the opening into the urethra serves as an anal orifice, which is absent. They are due to the absorption of the recto-urethral instead of the recto-anal septum in fetal life. When the normal orifice is established, the urethral aperture will generally close.

*Pathology.* No extensive study has been made, so far as I am aware, of the pathological anatomy of urethro-rectal fistulæ. The malignant and tubercular cases have been carefully examined and their characteristic features determined; in those due to other causes, however, only the gross pathology and clinical symptoms have been thoroughly studied.

There are two distinct stages of the disease, viz., the acute or suppurating, the chronic or cicatricial.

In all urethro-rectal fistulæ arising from other causes than tuberculosis and malignant growths, suppuration is an important feature. So long as it continues, the extent and dimensions of the fistula can not be determined, and the necessity of surgical interference is always doubtful. The waste of tissue from suppuration may be enlarging the orifice all the time, or the granulation with a gradually decreasing discharge of pus may be slowly closing it, so that if nature is properly aided a cure will ultimately result. Where the fistulous tract is short, as between the rectum and membranous urethra, where the septum is very thin, the suppurative period is very brief. The tissues here are dense and closely matted together, and as a consequence abscesses, phlegmons, or severe inflammations at this point soon break through into both cavities. The tissues separating the mucous membranes of the two canals here being so thin, it takes only a short time for their edges to come together, leaving the fistula bound all around by a mucous surface and bereft of all possibility of healing, except by surgical interference. It also follows that in these parts, the tissues being so thin, a larger area of surface membrane in each cavity will be affected by the sloughing process, and consequently the opening will be so much the larger.

We may therefore call attention to the fact that fistulæ in this region are larger, shorter, more direct, have less cicatricial tissue, and become more quickly chronic than those in the prostatic portion. There is also less cicatricial tissue in and about these fistulæ. Indeed, they generally consist of a sort of window between the rectum and the urethra, cut through a septum with edges as thin as paper. There appears to be a simple loss of tissue in the urethral floor and anterior wall of the rectum, the edges of which nature has bound with mucous membrane to avoid irritation and suppuration. This description does not apply to the condition after repeated cauterizations, irritation, and attempts at surgical interference.

When the opening is in the prostatic urethra the fistulous tract is narrow and tortuous, more apt to continue suppurating, and may have numerous diverticula, some of which open through the skin of the perineum, perirectal area, or even on the abdomen. When the disease is due to tuberculosis, these fistulous tracts undermine the edges of the mucous membrane and burrow beneath it in different directions. They are filled with a fungous, gellatinous granulation, and discharge a serous pus, and the skin surface through which they open presents a characteristic purplish tint. If the fistula is due to calculus, the stone, if it has not escaped, can be felt by the aid of a probe through the rectal opening, or with a sound in the urethra and the forefinger in the rectum it can be pressed up against the steel instrument and thus elicited. If the stone has escaped, there is left an irregular cavity with smooth walls, sometimes coated with phosphatic or uric-acid deposits, and having small openings in both the intestinal and urinary tracts. I have not seen or read of any burrowing diverticula in these cases.

When the fistula is produced by simple abscess of the prostatic gland, there exists at first a cavity of more or less extent, connecting with the rectum and urethra by small openings. This cavity is generally limited by the capsule of the gland, and consequently there are rarely any burrowing tracts or external openings. The cavity grows gradually less, and finally resolves itself into a fistulous tract between the urethra and rectum, widest in its central portion, lined with the so-called pyogenic membrane, and surrounded by more or less cicatricial connective

tissue. The thorough removal of all such tissues in operating for fistulæ is of the highest importance.

*Diagnosis.* The characteristic symptoms of urethro-rectal fistulæ are the passage of urine into the rectum during micturition and of gas and intestinal contents through the urethra during defecation. The abnormal passage of material takes place during the functional activity of the organ from which it comes. The amount of such material passed will depend upon the size of the opening and the obstruction to its flow through the natural channel. A tight stricture of the urethra causes an excessive flow of urine into the rectum, and a spasmodic sphincter ani causes an increased amount of intestinal contents to be passed into the urethra. The passage of fecal matter into the urethra, however, is very much less frequent than that of urine into the rectum. This is owing, first, to the prevailing course of such fistulæ being downward and backward from the urethra; second, to the size of the orifice being generally too small to admit any but liquid material, and third, to the fact that the sphincters are not often so contracted as to produce much obstruction to fluid or semi-fluid intestinal contents. Sometimes, however, gas and fecal matter are forced into the urethra, and even solid masses have been known to obstruct its channel and finally be passed through the meatus after much straining and pain. Such instances must occur in cases with large rectal openings, and although I have no proof to offer, I am convinced that they are always where the fistula is between the rectum and membranous urethra. Gas is passed through the urethra much more frequently than fecal matter, and this may even occur between the acts of defecation.

The urine passes into the rectum only at or immediately after urination. It is generally expelled at once, as the rectum is exceedingly intolerant of this secretion, even more so than the urethra is of fecal matter. Rarely, however, is it retained for some time, and only passed at the next act of defecation. In such cases it is difficult to differentiate between vesico-rectal and urethro-rectal fistula. After urethro-rectal fistula has existed for some time, ulceration of the rectal mucous membrane from irritation by the urine almost always supervenes. The discharge of pus from this may lead one to suppose that the fistula is still

in the suppurating stage. The seminal fluid may escape through the fistula into the rectum or not, as has been reported by Berard, according to the size of the urethral opening and its location, whether behind or in front of the ejaculatory ducts.

The physical evidences, as elicited by touch and sight, are after all the positive proofs of urethro-rectal fistula. If the opening is large, the tip of the forefinger can be passed into it through the rectum, and a sound introduced through the urethra can be easily felt. If the opening is small, the fistula can still be made out by digital examination through the mass of cicatricial connective tissue surrounding it, the elevated, pouting orifice, and the ridge-like tract of the fistula leading up to the urethral orifice. By the aid of a fenestrated or duck-bill speculum the orifice can be brought into view and a bent probe passed into it. When the tract is not too tortuous the probe can be passed entirely through it and brought into contact with a sound in the urethra. Sometimes the orifice is hidden in the folds of the rectum and very difficult to find. In such cases the laryngeal or dental mirror will be of good service, as I have found it to be in searching for the openings in blind, internal fistulæ.

The practice of injecting colored fluids into the urethra and rectum as a diagnostic test appears to me unreliable and without value except in differentiation between this and vesico-rectal fistula. This, in fact, is the only condition with which urethro-rectal fistula is likely to be confounded. We may, therefore, state in a very few words their characteristic features, and thus differentiate them :

#### URETHRO-RECTAL FISTULA.

- Rarely congenital.
- History of urethral or prostatic disease.
- Contents pass from one channel to the other only during functional action.
- Amount of material passed is small and irregular.
- Cystitis and frequent micturition rare.
- Opening in rectum generally low down.

#### VESICO-RECTAL FISTULA.

- Generally congenital.
- History of peritonitis or intestinal disease.
- Contents pass abnormally without regard to functional action.
- Amount of material passed is large and constant.
- Cystitis and frequent micturition without exception.
- Rectal opening generally well up cavity.

|                                                                                                    |                                                                                             |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Sound in urethra can be felt by probe or finger in rectum.                                         | Sound in urethra can not be felt through rectum.                                            |
| Colored fluids injected into bladder do not appear in rectum until micturition takes place.        | Colored fluids appear in rectum immediately after injection into bladder.                   |
| Deposit of cicatricial connective tissue is generally large and easily felt with finger in rectum. | Deposit of cicatricial connective tissue generally small and above the reach of the finger. |
| Fistulous opening in rectum generally small, and the tract can be made out by rectal touch.        | Opening in rectum generally large, and no tract can be felt.                                |

*Treatment.* The treatment of urethro-rectal fistula has been as various as it has been unsuccessful. Few authors indeed have had the temerity to advise any methods as sure, the most being content with suggesting palliative remedies and possible surgical procedures with which they have had no experience, and in which they have little confidence.

Duplay (Am. Encycl. Surger., VI, p. 507) says: "While traumatic fistulæ, those which follow acute and tolerably circumscribed abscesses, present a good prospect of recovery, fistulæ which follow in the train of diffuse and extensive suppuration, either idiopathic or of a tubercular nature, and which are accompanied by prostatic sinuses, are almost always incurable. Finally, if there be some examples of spontaneous recovery of urethro-rectal fistulæ, it must be acknowledged that most frequently they last indefinitely, and we shall soon see that the chances of cure by surgical interference are extremely few." And again he says (Traite de path. Extern, t. VII, p. 180): "On the whole, if we had any examples of spontaneous cure of urethro-rectal fistula, we might counsel that it is best to wait, as the chances of cure by surgical interference are very slight."

Sir Henry Thomson, after curing one case by causing the patient to lie on his stomach while urinating, tried it on several others and failed. He concludes, from an enormous experience, that such fistulæ are always a serious matter, requiring all the skill of the surgeon and patience of the patient; that surgical intervention is rarely of great benefit, and that constant catheterization offers the best prospect of cure. He advises the use of the galvano-cautery, as he has benefited some cases with it, but frankly says he has never cured one. Taylor says, in the last edition of his work, that such fistulæ occur from prostatic ab-

scess and are most difficult to cure, but suggests no treatment whatever. Morris (Treves Syst. of Surgery, II, p. 898) advises catheterization combined with slitting open and scraping the tract when "hard and callous," but does not state whether he cuts through the perineum to do this or not. He does not report any cases as cured, but says he has benefited one case by supra-pubic cystotomy after the other method had failed.

The principles underlying the successful treatment of these fistulæ may be briefly stated, and differ very little from those laid down by Duplay:

1. Remove all obstruction to passage of urine or intestinal contents through their normal channels. This involves the treatment or removal of rectal or urethral stricture, polypi, or other tumors, and the overcoming of sphincteric spasm and obstruction at the anus. We can not enter into the discussion of methods for accomplishing these ends at the present time further than to say that the effects of stretching the sphincter ani are too transient to be of much benefit. Only thorough division with the knife or cautery is likely to be effectual. This method was advocated by Desault years ago, but it generally fails unless supplemented by other measures.

2. Protect the parts from the abnormal passage of urine or fecal matter and gas. Permanent or periodic catheterization will accomplish this so far as the urine is concerned, but as to the gas and fecal matter it is much more difficult. Esophageal tubes, canulas with aprons attached and introduced into the rectum, packing of the anterior rectum and fistulous opening with gauze, and many other means have been tried for this, all with but little success. Constipating the bowels and allowing them to move only once in four or five days is perhaps next best to the diversion of the fecal current through an inguinal anus. This last procedure has hitherto been considered too formidable a measure to be advised except as a *dernier ressort*, but since the advent of aseptic surgery and the demonstration of the fact that these temporary artificial ani can be safely and permanently closed, the operation would be entirely justifiable where other methods have failed. As will be observed, I did this method in my third case, not for the cure of the fistula, however, but with the view of curing the severe rectal ulceration.

3. The therapeutic and surgical treatment of the fistulous tract itself:

The application of stimulating or cauterizing agents, such as nitrate of silver, chloride of zinc, caustic potash, or iodine, is among the first methods to be adopted, and should be patiently tried before resorting to more radical measures—but in conjunction with catheterization as advised above. The galvano-cautery, as advocated by Sir Henry Thomson and M. Dentu, may take the place of the therapeutic remedies, although I do not know of any case having been cured through its use. Ziembieki wisely says, concerning this method, that “the fistula must be very small and entirely surrounded by mucous tissue (in other words, that there should be little or no cicatricial tissue). If the fistula is large and surrounded by cicatricial tissue, this treatment will be unsuccessful and leave the orifice larger than before.”

The surgical procedures by which it has been attempted to cure urethro-rectal fistula are very numerous. Laying open the tract into both channels through the perineum, scraping out the fungous granulations, and leaving the wound to heal by cicatrization has been done a number of times with one reported success. Converting the condition into two fistulæ, rectal and urethral, by perineal section and treating the rectal portion by an elastic ligature has been advocated and seems plausible, but no cases have been reported as cured by this method.

Sir Astley Cooper advised introducing a sound into the bladder, and with this and the forefinger of the left hand in the rectum for guides, to split the recto-urethral septum well above the fistulous tract, thus cutting the latter in two; then pack the wound, and afterward allow the urine to flow through the perineal opening. He succeeded in curing one case by this method, I believe, but others have not been so successful.

The operation generally advised is some modification of the Sims operation for vesico-vaginal fistula, and consists in freshening the edges of the fistulous opening and sewing them together with silkworm gut or silver wire sutures. This method has been effectual in a few cases, but all operators agree with Moorhof, who says: “The operation here presents more difficulties and is much more rarely successful than is vesico-vaginal fistula.” It

has been clearly shown that the passage of healthy urine over a sutured wound does not interfere with healing. We must seek for some other cause, therefore, to explain the numerous failures by the suturing method. When the urine collects in a pocket, it soon decomposes, pyogenic bacteria develop, and any healing process in the part will be soon arrested. This phenomenon and the fact that simple suturing of the rectal opening always leaves such a pocket easily accounts for the wounds not healing. Especially is this true when the fistulous tract is long, narrow, and tortuous, in which event it would be only partially obliterated, and the collection of urine in the remaining portion will soon produce inflammation and sloughing in the wound. In order that suturing may succeed, there must be no possibility of the retention and decomposition of urine behind or over it. The prevention of this has been the secret of success in the cases which I shall report.

The method practiced by Dr. Wyeth in the case which I shall quote later has the disadvantage of leaving a marked pocket in the urethra and a raw surface in the rectum. It consists in freshening the edges of the fistulous opening in the rectum, then dissecting up two flaps of mucous membrane from the rectal wall, which are left attached at the margin of the fistula; these flaps are turned over so that the epithelial surface forms the urethral wall, and are sutured in this position with silkworm gut. My friend, Dr. Alexander, mentioned a case in which he had obtained a cure by a method similar to this after a number of attempts, but from his description I should judge he used a method more similar to the Diffenbach operation for fistula in the pendulous urethra.

All such procedures, however, are surface operations, and only applicable to fistulæ of no depth—those in the membranous urethra generally. Where the urethro-rectal septum is at all thick, where there is much cicatricial tissue, or where the fistulous tract is over one fourth inch in depth, we should invariably expect failure by this method. The whole pathological tract must be obliterated before we can hope for a cure. Failure in this is more often the cause of failure than is infection.

Maydl resorted to suprapubic cystotomy as a preliminary operation to suturing a urethro-rectal fistula. The result, how-

ever, does not seem to have been satisfactory, as his patient left the hospital only "gebessert" (improved).

White and Martin recommend an operation similar to that of Sir Astley Cooper, but say further on: "A more radical method and one giving better prospect of success is thus conducted: A curved incision is made across the perineum in front of the anus, this orifice lying in the concavity of the curve. This incision, identical with that employed for exposing the seminal vesicles, is deepened until the rectal and urethral orifices of the fistula are exposed and made accessible. In this dissection, . . . the two orifices having been exposed, and the main tract and its diverticula having been opened, thoroughly curetted and cleaned, the edges of the fistulous opening are extensively denuded and closed by catgut sutures introduced as in the closing of vesico-vaginal fistula. When the tract is small and fairly direct, and the surrounding tissues healthy, the perineal wound may be closed by buried catgut sutures. When there have been much infiltration and suppuration, the wound should be packed and allowed to heal from the bottom." They do not cite a single case, however, as having been cured by either method.

In 1889 Ziembieki applied a new principle to the cure of urethro-rectal fistula, which, theoretically, perhaps, is the best operation yet devised. It consists in destroying the parallelism or apposition of the rectal and urethral orifices, so that failure of one to unite would not involve the other. To accomplish this he dissected the rectum from all its attachments up to a point above the fistulous orifice, just as for perineal excision; he then freshened the edges and sewed up the openings in both rectum and urethra. Finally he rotated the free end of the rectum on its axis until the fistulous point was brought well off to the side and thus out of line with that in the urethra, and sutured it in that position by stitches through the anal margin; a tube for the escape of gas was introduced and the rectum packed with gauze in order to hold the walls in apposition with the surrounding tissues. Primary union took place in the rectum, but the sutures in the urethra gave way on the seventh day, leaving a small perineal fistula; this, however, healed in a short time, and the patient went home at the end of six weeks perfectly well. Dr. Fuller has recently reported an almost identical operation

done independently in 1896 with a similar result, so far as the rectum is concerned, but there still remains a small perineal fistula after seven months, probably due to a mistake in the after-treatment. This operation all will see is long, bloody, and formidable, especially for weak and exhausted subjects. It is less difficult to perform, however, than most other plastic operations for this disease, as the space for operating is greatly increased by the dissection.

Up to 1896 I had seen but two instances of this disorder, each in the charge of other surgeons. Both of these cases were failures so far as cure was concerned, though treated and operated on most skillfully. My observation and reading, however, showed me that it was always the urethral side which gave way first and infected the rest of the wound. I reasoned that if all possibility of the retention of urine in the urethra and its subsequent leakage could be prevented, the question of curing these fistulæ would be solved. I therefore welcomed an opportunity to put my theory to the test when a case was brought to me by my esteemed friend and confrère, Dr. J. A. Bodine, of New York City. The fistula opened into the rectum about half an inch above the external sphincter, and was large enough to admit easily the end of my index finger. The floor of the urethra was thus absent to a considerable extent, and required to be rebuilt. There was considerable though not excessive cicatricial connective tissue deposit about the opening and a stricture of the membranous urethra anterior to the fistulous opening. After several days' preparation and treatment to sterilize the urinary and intestinal secretions, I operated on August 30, 1896, as follows: The sphincter was thoroughly incised and all the cicatricial tissue cut away with scissors, thus freshening the edges of the fistula at both ends. The intestinal wall was then dissected from its anterior attachments up to a point three fourths of an inch above the fistula and half an inch to each side. The stricture of the urethra was then operated on by perineal section, the incision being carried backward into the fistulous opening. A flap was then dissected from the soft tissues at either side of the urethra large enough to replace that portion of the floor which had been destroyed. These were sewed together with catgut sutures over a full-size sound and introduced through the meatus

in order that the caliber of the canal might be accurately re-established and no pocket left. The fistula being thus closed, the sound was withdrawn and the fresh perineal wound and anterior incision in the urethra left unsutured. The edges of the intestine were then sewed together with chromicized catgut, and the rectum packed with iodoform gauze, a drainage-tube having been introduced for the escape of gas. A soft catheter, No. 12 F., was introduced into the bladder through the meatus and fastened there. The perineal incision was loosely packed with absorbent gauze and dressed with an ordinary T bandage. As the catheter seemed to cause no inconvenience, it was left in for eighteen days, the bladder and perineal wound being irrigated daily with Theirsch's solution. Convalescence was uneventful, the perineal wound healing in about six weeks, and the patient left the hospital December 1, 1896, perfectly well. He was detained there longer than was apparently necessary on account of a slight urethral discharge due to unavoidable granulations in the operative field, and in order to continue the passage of sounds for the cure of his stricture.

My second case was not a typical one, but it involved the same principles of treatment. The third, however, was a typical one of long standing, with much induration and with serious complications in the shape of rectal ulceration and stricture, although the floor of the urethra was not destroyed to any considerable extent. This patient still suffers from a slight ulceration of the posterior wall of the rectum, where the stricture of that organ was cut, but he is entirely well of his urethro-rectal fistula. Both cases were presented to the section of Genito-Urinary Surgery of the New York Academy of Medicine, February, 1897, and discussed by that body. I have recently seen them and verified the cure.

Let us review briefly the cases of this disorder thus far reported, drawing our conclusions:

1. Dr. Case. (*N. Y. Med. Chirurg. Bull.*, 1831-2, p. 77.) M. 40. Presented two external fistulous openings, each of which connected with both rectum and urethra. The fistulæ were due to abscess of the prostate following stricture of the urethra. All the fistulous tracts were laid open, and external urethrotomy was performed for the stricture. The wounds all healed by granulation, and the patient recovered.

2. Nott and Emmett. (*N. Y. Med. Journ.*, 1870.) M. 32. Urethro-rectal fistula in membranous portion, due to operations for stone. Edges pared and sewed up with silver wire sutures, as in operations for vesico-vaginal fistula. Recovery.

3. Erichsen. (*London Lancet*, 1857, II, 247.) M. 22. Urethro-recto-perineal fistula, due to abscess of prostate. Does not state what this abscess was due to, or whether there was stricture of the urethra or not. Operated by laying open and scraping all fistulous tracts. Patient appeared to be doing well, but the fistula was not healed when case was reported.

4. E. J. Birmingham. (*N. Y. Med. Jour.*, 1876, 9, 113.) M. 24. Urethro-rectal fistula, due to abscess of the prostate five weeks after acute gonorrhea. Feces passed into the urethra, but no urine into the rectum. Treated by the introduction of sounds into the urethra, and application of nitrate of silver to the fistulous opening. Recovery.

5. M. Fleury (*Bull. et Mem. d. l. Soc. et Chir. d. Paris*, 1876, p. 50) reports two cases urethro-rectal fistula in tuberculous subjects, and considers this condition a pathognomonic evidence of pulmonary tuberculosis. The fistulæ, he says positively, were not due to gonorrhea, stricture, or traumatism. Treated by local applications. Patients both died of pulmonary phthisis, the fistulæ still persisting.

6. Sir Henry Thomson (*Diseases of the Urinary Organs*, 1882, p. 66) reports case of urethro-rectal fistula, due to patient's thrusting bougie through the urethra into the rectum. He succeeded in curing the case by causing him to lie on his belly while urinating. No other treatment is mentioned.

7. Jones and Eaton. (*Am. Jour. Medical Science*, 1877, p. 102.) M. 36. Had no venereal history, but suffered from "hemorrhoids, stricture of urethra, stricture of rectum, and recto-urethro-perineal fistula." The urethral fistula they say was due to spontaneous rupture while lifting a heavy weight. They first did external urethrotomy; afterward applied ligature to rectal fistula and did partial proctotomy for the stricture. Case said to have been cured, but the whole history is so improbable that I only accept it *cum grano salis*.

8. E. Frankel (*N. Y. Med. Record*, 1876, XI, 231) reports case of M. 40. History of gonorrhea, urethral stricture, and

forcible thrusting of sound through the urethra into the rectum. Perineal section and cauterization failed to cure the fistula, and it was sewed up eight months later by the Sims method, silver sutures being used. Recovery.

9. Peraire (*France Medicale*, 1883, t. 515) reports case of M. 29. History of having had gonorrhea three times, together with urethral stricture. Developed urethro-rectal fistula without marked abscess. Died from chronic nephritis, the fistula still persisting.

10. Civiale (*Traite des Malad. d. voies urinaire*) reports two cases, one of which was cured by the "sonde a demeure," but the other resisted all efforts to close it.

11. E. Schwartz (*L'Union Med.*, 1874, p. 2) reported case of M. 22. History of venereal disease followed by abscess of the prostate, from which there resulted urethro-rectal fistula. Schwartz said the patient was cured by the "sonde a demeure" and cauterization, but Devin (*Thesis*, p. 27) says he saw this case a short time afterward and demonstrated beyond doubt that the fistula still existed.

12. Allen (*Austral. Med. Jour.*, Melbourne, 1883, p. 306) showed specimen of tubercular prostate and bladder with urethro-rectal fistula. The patient gave a history of prostatic abscess and rupture into the rectum, with subsequent passage of urine through the opening. The patient suffered from general tuberculosis, and died without any relief to the fistula.

13. Menocal (*Rev. d. Med. y cir. pract.*, 1889, p. 306) reports case of boy six months old with imperforate anus, and who passed gas and fecal matter through his urethra. By establishing a normal anus and freshening and stitching up the aperture between the rectum and urethra, he obtained a perfect cure. (*Schmitt's Jahrbuch*, 1890, p. 66.)

14. Wyeth (*Canada Lancet*, 1887-88, p. 321) reports case of urethro-rectal fistula due to formation of calculus around a small piece of drainage-tube left in an old perineal fistula following lithotomy. Rectal orifice was three-fourths inch long and one-fourth inch wide. It was situated one inch above anal aperture. It was closed with silkworm gut sutures after the method already described as Dr. Wyeth's. The patient returned one year later with irritation of the rectum, and complaining that he

still occasionally passed a few drops of urine into his rectum. Three of the stitches still remained in the rectal wall. They were removed, and careful searching with the probe failed to show any fistulous opening. Dr. Wyeth fails to state whether the removal of the stitches relieved the patient's symptoms, and we must put this case down as only a probable cure.

15. Maydl (*A. Eder-Artzl. Berichte*, 1888-89, p. 75) reports case of M. 24, who had suffered from urethral discharge for one year. He then developed an abscess, where, Maydl does not say, but it opened into the rectum and urethra, and for nine months urine had passed from this organ in gradually increasing quantities. After unsuccessful attempts to close the fistula by cauterization and operation, he resorted to suprapubic cystotomy, followed by suturing of the fistula. The patient was improved but not cured.

16. D. Antona (*Riv. Clin. d. Univers. di Napoli*, 1889, p. 19) reports case of boy fifteen years old with stricture and urethro-rectal fistula resulting from lithotomy. After thoroughly dilating the stricture he dissected the anterior wall of the rectum from the urethra; sewed up the fistulous opening in the former and left that in the urethra to heal by granulation. This case appears to have recovered.

17. Ziembieki (*Cong. Franc. d. Chir. Proc. Verb.*, etc., 1889, Par. 1890, IV, 295) reports case of urethro-rectal fistula caused by man being thrown on rod of iron. After having tried at separate times "cauterization, section of sphincters, the Cooper and American methods" in all five operations with five failures, he practiced the operation of torsion as described above. This resulted in a perfect cure.

18. Fuller (*Jour. Cutan. and Genito-Urinary Dis.*, N. Y., April, 1897) reports case of urethro-rectal fistula in which he performed an operation similar to that of Ziembieki. This patient was much improved but not well at the time of the report.

19. Devin (*Thesis*, Paris, 1875) reports case operated upon by Duplay as many as five times, besides cauterization. The operation consisted in efforts to close the upper part of the fistula at each sitting by plastic method, and thus gradually reduce the opening until perfect closure would be obtained. It was suc-

cessful in reducing the size of the aperture, but the patient was not cured, as at the time of the report the patient was still passing urine through the rectum.

20. Pingaud (*Devin's Thesis*) operated on case of urethro-rectal fistula following peri-prostatic abscess by Sims' method in 1884. Temporary relief was obtained, but after a short time the fistula recurred, and at last report the surgeon was contemplating further operative efforts at closing it.

21. Boyer (*Malad. Chirur.*, t. VII, 5th ed., p. 193) has reported one case of urethro-rectal fistula following prostatic abscess which he succeeded in curing by cauterization with nitrate of silver and the actual cautery. He reports two other cases produced by thrusting sounds through the rectum, and goes on to state that he considers the disease generally incurable.

22. Pichet (*Devin's Thesis*) reports case due to gonorrhreal abscess in which he failed to obtain cure either by operative or palliative treatment.

In addition to the above, I have the honor to report three cases, two of them typical, in which the suturing operation with perineal drainage, as I have described before, has proved completely successful:

23. F. 28. Urethro-rectal fistula following urinary abscess; stricture of the membranous urethra. Fistula had existed about two months, and was three fourths of an inch long by one fourth of an inch wide, beginning one-half inch above anus. August 29, 1896, plastic operation was done to restore floor of urethra, and the rectal opening was closed by chromicized catgut sutures. The ends of external sphincter were not reunited. External urethrotomy was done for the stricture, the incision in the urethra being carried backward into the fistulous opening. The perineal portion of this wound was left open for drainage, and a permanent catheter was introduced. Convalescence uneventful. No urine passed into the rectum after the operation. Perineal fistula closed in about six weeks. Patient was seen April 10, 1897, and remained perfectly cured.

24. Mr. L., 40, presented himself at my office September 9, 1896, with history of fistula in ano which had been operated on seven or eight times, but in vain. The original abscess was due to fall on pommel of bicycle saddle. The fistulous tract had been opened

into the rectum, and presented a granulating wound extending up that organ to the extent of about one inch. There was one tract burrowing around the right side of the anus, and another running forward in the perineum, close to the urethra. The wound in the rectum and the tract to the side of the anus were dissected out and sutured. The perineal tract was laid open, scraped, and packed on September 11, 1896. One week later the sutured wounds had healed perfectly, but it was found with a very fine probe that the bottom of the perineal tract had not been reached. By the aid of cocaine this was traced forward almost to the scrotum and to the very wall of the urethra, where a small abscess cavity was found. Close questioning at this time brought out the fact that the patient early in his disease had passed gas through his urethra, but no urine through the rectum. Examination also showed a slight stricture of the membranous urethra, but no opening into the canal was found at the time. The wound was scraped and cauterized, the stricture dilated, and at the end of six weeks the patient left the city well. While this was not a typical case, I have no doubt in my own mind that it was originally a urethro-rectal fistula.

25. Mr. W., 40. Entered Polyclinic Hospital November 11, 1896. Gave history of long-standing fistula in ano and rectal ulceration which had been operated on three times, cauterized times without number. He thought the ulceration existed first, for one year previous he had suffered greatly from the passage of urine into the rectum at every act of micturition. Examination under chloroform showed stricture of the rectum, with severe ulceration of that organ; a large mass of cicatricial connective tissue connecting the urethra with the anterior wall of the rectum and through this a small, tortuous, fistulous tract running downward and forward from the rectum, through which only the finest probe could be introduced. The probe could not be brought into contact with a sound in the urethra. On account of the rectal ulceration and stricture it was decided to divert the fecal current before attempting to cure the fistula, and accordingly left inguinal colostomy was performed on November 14, 1896. At the same time posterior proctotomy was done and the fistula scraped, hoping possibly by these means to obtain healing by granulation. On December 3d, as there appeared to be no dimi-

nution of the flow of urine into the rectum, a plastic operation was done, similar to that in my first case for the closure of the fistula. There was much more cicatricial tissue in this case, and the rectal opening of the fistula was further removed from the anus and more difficult to reach. This patient's urethra would not tolerate the permanent catheter, and therefore he began to pass his urine through the perineal wound on the third day. The wound in the urethra closed in three weeks, however, and since then his urination has been perfectly normal. Owing to the burning of the Polyclinic Hospital on December 25th, the patient was transferred to my service in the Alms House Hospital, where I closed the artificial anus on January 23, 1897. I saw him April 1st, and with the exception of a slight ulceration of the rectum posteriorly and a very small granulating spot on the perineum, he was perfectly well. He passes all his urine through the meatus, and but for the slight rectal discharge would not know he had any thing the matter with him.

Of the twenty-five cases thus reported, eight have been cured by operative and four by palliative methods. These four were all comparatively acute cases; no chronic cases have been cured by medication, stimulation, or cauterization, and we may fairly conclude that patients can expect little from this mode of treatment. Surgical authorities give us very little more encouragement from operative procedures. While it is recognized that the cases above were nearly all reported as comparatively successful, and that the percentage of cures would fall far below the thirty-three per cent. shown here, nevertheless they do show that recovery is possible, and that the victims of this disease should not be consigned to their fate. Finally, notwithstanding the number is very small, three consecutive successes by one operator would seem to show that there was something more than good fortune in his method, and encourage us to offer a more favorable prognosis in these distressing cases than we have done heretofore.

## HEMORRHOIDS.\*

BY WILLIAM M. BEACH, A. M., M. D.,

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Hemorrhoids arise from serial congestions and inflammations of the ano-rectal tissues. For convenience of discussion, I shall speak of them as internal and external varieties. Various terms are applied to designate the pathology, but hemorrhoids and piles seem to occupy the first place in nomenclature. Hematoma of the rectum would more nearly describe the pathological condition, in that it is a vascular growth, supplemented with interstitial changes forming a real tumor.

The term pile is derived from *pila* (a ball), while that of hemorrhoids is from two Greek words *aiμα* (blood) and *ρέειν* (to flow), literally flowing with blood, neither term being fully significant of the real lesion. Their recognition is easy, but their significance etiologically far-reaching. To diagnosticate rectal varices requires very little effort, but to determine the predisposing and exciting causes will require very thorough investigation.

Perhaps no other ailment confronts the general practitioner so frequently, and yet for which he does so little, as that of hemorrhoids. It is also a fact that few persons attain the age of sixty years without in some way having suffered from this disease. Sex offers no immunity, and it invades alike the palace and the cottage. In most cases no examination will be made, the diagnosis being furnished by the patient, he in the same breath suggesting a certain line of therapeutics. The idea is prevalent among the laity that any thing the matter with the rectum can be nothing else than piles, whereas an examination often reveals other lesions.

As a rule hemorrhoids *per se* are not painful, but complicated with fissure, fistula, erosions, etc., pain is the factor that induces the patient to seek his doctor.

*Anatomical Considerations.* In order to have a clear conception of the nature and location of hemorrhoids and the symp-

\* Read before the Allegheny County Medical Society.

toms they produce, also to guide us in surgical measures, I shall direct your attention to some points in the anatomy of the rectum. It is not my purpose to weary you with anatomical detail already familiar to you, but rather to limit my remarks to the more salient features of structural elements in the hemorrhoidal area. This region includes important factors, being the seat of various diseases and reflexes.

Viewed through the speculum, you will notice elevations and depressions in a normal rectum, which serve a definite purpose. The hemorrhoidal "inch" is the lower segment of the gut, and is bounded internally by the ampulla or pouch, and externally by the skin. It is lined by mucosa, whose peculiar structure constitutes it a tactile organ, endowed with a special sense, warning a healthy person of the presence and movement of the fecal mass. The reflex power of the nerves over the sphincters so control the latter that they resist the unexpected escape of contents without constant cerebration. At the base of the columns of Morgagni are about ten small papillæ, each containing an artery and a nerve, the latter derived from a ganglionic enlargement beneath, a process of the plexus of Meissner. These papillæ are important in that they appear to be the source of the special rectal sense. Unfortunately they are considered pathologic by many surgeons, and are held responsible for many reflex phenomena connected with the digestive system. The anal orifice, guarded by the ectal and ental sphincters, is the terminus of the gut, and its tendency is to remain closed without volition. Dr. Stroud, of Cornell University, has clearly demonstrated that this power is resident in the peculiar nerve structure and supply which is central in the ganglion of Impar, and peripheral under the epithelium at the anal orifice. He further demonstrates that the narrow zone between skin and mucosa consists of stratified epithelium mounted on a scalloped margin known as the pecten (comb like). The mucosa is thrown into folds or columns by the action of the sphincters, which can not be entirely obliterated by divulsion. These are called the columns of Morgagni, and the space and pockets between the sacculi horneri.

The pecten containing the special rectal sense forms the floor of the ampulla when the organ is in repose, and appears vertically and directly in apposition to the approaching fecal mass. These

are supposed to be the sense organs to control the actions of the sphincter muscles. The pecten is limited above by corresponding digitations of mucosa known as *linea dentata*, and below by Hilton's white line or junction of the ental and ectal sphincters. It is richly supplied with nerve endings from Meissner's plexus, located in the submucosa and belonging to the sympathetic system—and also terminal branches from the pudic nerve. A tear occurring in this tissue by the passage of feces becomes very painful. I have thus described this important region to show subsequently how the integrity of the organ may be impaired by the development of hemorrhoids as well as by certain operations for their removal.

Having observed briefly the general structure and innervation, it is now proper to notice the blood supply of the organ directly concerned in the formation of piles.

The rectal arteries, superior, middle, and inferior, pass parallel to one another toward the anus and freely communicate by large transverse branches. The veins are similarly arranged and establish the hemorrhoidal venous plexus beneath the rectal sense organ, and extending upward for about two inches. As varicose veins occur in the extremities, so they are found in the rectum, but much more frequently in the latter, and for anatomical reasons. The veins of the extremities are tributaries to the general venous system only, while rectal veins contribute to both general and portal systems, the latter through the inferior mesenteric vein without valves, and the radicles passing through the muscular coats of the bowel at right angles, thus predisposing the hemorrhoidal venous plexus to engorgement. The vascular walls thicken by inflammatory processes with partial or complete segmentation from the plexus, and the pile is formed, obtunding the rectal sense organ, thereby predisposing to constipation.

*Etiology.* 1. From the foregoing, hepatic derangements obviously occupy a prominent place in the list of alleged causes of this disease. It is well known that torpid liver tends to obstruct the portal circulation and "back water" the column of blood into the venous radicles, which suffer most; constipation follows, and, further complicating the damaged structures and enervating the fecal reservoir, constitutes itself a real disease.

This leads to the use of purgative medicines. Doctors too freely resort to active cathartic remedies for the relief of constipation, when they well know that the subsequent congestion is exaggerated, the very thing they wish to avoid.

2. Certain cases of piles appear to develop and are maintained by the ingestion of certain foods—perhaps due secondarily to rapid and imperfect mastication and insalivation, usually the starting point of hepatic derangement and malassimilation.

3. Pregnancy and the usual mode of dress adopted by women contribute no little toward the pathology.

4. *The Bicycle.* I do not wish to condemn the use of this machine in a general way, but I do enter a protest against the practice of "scorching" and long road races; moreover, the selection of a saddle is as important to the pelvis as glasses to the eye. The reactionary engorgement of pelvic vessels following bicycle sport predisposes to the formation of piles. I have observed several cases of piles due to this practice.

Among other causes may be mentioned excessive venery, use of tobacco and other narcotics, pruritus ani, age, and sedentary habits.

The diagnosis of external is less difficult than that of internal piles, especially when the latter are in a quiescent state. In this connection I would urge the necessity of a physical examination. As has already been stated, the patient will come to you alleging piles of some kind, as bleeding, itching, blind, painful, and what not. An experience of several years has convinced me that in no case should the doctor depend upon the statement of his patient. Following such examination were revealed frequently other lesions, as polypus, fissure, ulceration, and malignant disease. Digital search usually suffices, but ocular examination through a speculum will always remove doubt. The patient should lie on his left side, with legs well drawn up. The table should be one which you can change into a double incline, so that hips and head are elevated at the same time. The Buchanan chair is admirably adapted to this purpose, besides it is cheap and easily kept clean.

Different symptoms will accompany the various stages of the disease. At the inception or stage of engorgement there is a sense of fullness, burning, and itching. Later the tumors being

well formed protrude and bleed, causing various reflexes, such as pain in loins and legs, irritation of bladder, nausea, and headache; a fissure complicating will produce much pain. The source of these symptoms is readily explained by reference to our anatomical considerations, by the connection of this region to the abdominal brain and pneumogastric nerve through intervening plexuses. The external variety as a rule will cause the patient more pain and inconvenience, since they are located near the nerve filaments supplying the anus, lighting up a spasm of the sphincters with consequent swelling and inflammation of the pile. Hemorrhoids occurring above the sphincters are free from pain, since the end organs do not supply the ampulla; on the other hand, hemorrhage is a more frequent symptom, especially when the tumors are in a state of turgescence, which generally affords relief and follows a hard stool.

*Treatment.* That the treatment may be quick, safe, and pleasant, the ingenuity of the physician has been severely taxed. Many devices have been urged to cure piles, from water to the most radical surgical procedures. Dr. Mathews, the recent guest of this Society, in his instructive address declared that only in late years has the medical profession become sufficiently interested in diseases of the rectum, hitherto the legacy of the charlatan.

We can not in the limits of this paper fully discuss the treatment of piles, as, in other portions of our subject, the writer only intends little more than a mere outline for the basis of a general discussion. Besides, there is sufficient material in each division for a paper. Again we refer only to the late stages of the disease, or where the tumors are well formed and permanent.

To compass the permanent cure implies (*a*) the eradication not only of the piles, but (*b*) the removal of the primary cause, for if that obstacle remain, piles will surely recur. This paper will consider only the first proposition. This disease is distinctly surgical, and should be attacked surgically, either in a quiescent or turgescient state.

The following plans have been recommended: 1. Injection. 2. Electrolysis. 3. Divulsion. 4. Crushing. 5. Incision. 6. Whitehead's operation. 7. Submucous ligation. 8. Excision and suture. 9. Clamp and cautery. 10. Ligature with incision.

Modifications of these plans have been made and reported under the guise of new operations. Most of these procedures are mentioned only to be condemned as unscientific if not fraught with danger to life or functional impairment of the organ.

The charlatan usually has resource in the method by injection, and that is probably the chief reason it is in disrepute among scientific men. However, there does seem to be some virtue in the scheme as a palliative and inhibitory agent, but the danger of emboli and sloughing should warn the doctor to proceed cautiously.

Never inject skin tags or external piles. Internal piles are more suitable for this practice, and the writer uses a solution in timid patients only who will not submit to anesthesia and operation.

The following formula has been of service :

|                                  |             |
|----------------------------------|-------------|
| Phenol sodique (Bobeauff's)..... | 3 i;        |
| Aqua destillatæ .....            | 3 iss. ℥ M. |

Inject from five to twenty drops into the tumor. Care should be taken to sterilize your needle before each operation, nor inject more than one pile at a sitting. The solution should be fresh and clear of sediment by filtration. I have had no untoward results from the solution, but can not say that a single case has been cured.

Electrolysis, divulsion, crushing, and incision with turning out of clot promise temporary relief only.

While the American operation has many devotees, yet it will never meet with popular favor in the profession; first, because the technique is too elaborate, and second, because it impairs the organ. The dissection of the pile-bearing surface by this method involves the destruction of the rectal sense organ of Stroud, already described.

Suturing the wound after excision of the pile is rarely satisfactory, since a submucous fistula is liable to follow, owing to the failure of complete union. Wounds of the mucosa, here as elsewhere, heal better by granulation, hence the objection to the plan by extirpation and suture, though otherwise a unique procedure.

Submucous ligation is done by passing a curved needle armed with ligature under the mucous membrane at Hilton's white line and bringing it out at the same point, including in its circuit portions of the venous plexus. This plan, with the last mentioned, is among the newer suggestions.

Clamp and cautery and ligature with incision are most generally practiced. The former has an able champion in Dr. Kelsey, while the latter receives distinguished favor at the hands of Allingham, of St. Mark's Hospital, and Dr. Mathews. Both are rational measures and insure desired results with little pain to the patient, besides a limited amount of tissue is sacrificed, obviating stricture and leaving the sense organ intact. The clamp method vouchsafes a speedy cure if uncomplicated by secondary hemorrhage. Probably the only tenable argument against it is the liability of bleeding, with but a thin cautery crust to prevent it.

My own experience with the ligature enables me to recommend it without reservation in all cases. If properly done, very little pain follows, thus comparing favorably with the cautery. The technique is simple and the necessary instruments few and inexpensive.

The patient is so prepared that the rectum is clean and free from fecal matter, which is of the highest import in asepsis. As in all other operations of the rectum, the first step is to thoroughly divulse the sphincters to allow the internal piles to protrude, which should always be disposed of before the external; moreover, divulsion overcomes any tendency to spasm of the sphincters, factors conducive to constipation. Each tumor is seized with a vulsellum near the base and drawn down. An incision is made through the mucosa, to encircle the growth, cutting deeper on the lower side. It is then transfixed with braided silk ligature and each half strangulated; now cut off the pile close to the ligature, leaving the smallest amount of tissue to slough. The ligature will not slip, and it only contains in its circuit the blood-vessels, thereby precluding pain. The incision in external piles should be limited to the skin portion only, that is from the mucosa on one side to that of the other, thus precluding the formation of a fissure or contraction. All skin tags should be removed, since they swell and become tender on the slightest provocation.

When the anal orifice throughout its circumference presents a uniform engorgement and flabby skin, a safe practice is to tie them off by sections, including a goodly portion of the skin. In such a case I incise around the whole section. The smallest hemorrhoids should be disposed of first, so that they may not be overlooked, for if any remain the cure will not be complete. Of course asepsis is observed throughout.

Owing to the length of this paper we must omit the consideration of the questions of after-treatment and complications, also those of anesthesia and palliative treatment.

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## THE PRESENT STATUS OF RECTAL SURGERY.\*

BY J. M. MATHEWS, M. D.  
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Please permit me to thank you for the courtesy extended me in the invitation to read a paper before this distinguished society. At the suggestion of my friend, Doctor Foster, I have selected as my subject something in the line of thought with what has been my daily work for twenty years. Therefore, with your permission I will occupy the time allotted me in considering The Present Status of Rectal Surgery.

Of course this paper can be only a brief epitome of the more salient points of the subject, and in the consideration of the same I shall try to avoid discussion, but rather give my own views, which may be at variance with others who have written on the subject.

Time was when intelligent rectal literature was very scarce, for the reason that very little attention was accorded it by the respectable part of our profession. Hence it was but natural that diseases of the rectum were treated mainly by the charlatan. Literature from such a source would be both incomplete and untrustworthy. In the last decade or two, however, much attention has been given this subject both in Europe and in this country, and to-day the status of rectal surgery is very different from what it was twenty years ago.

\* Read before the Allegheny County Medical Society, Pittsburgh, Pa., January 25, 1898, by invitation.

Across the water we are to thank for this elucidation such men as Allingham, sr. and jr., Cripps, Edwards, Cooper, Goodsall, and Ball; in this country, Earle, Bacon, Martin, Cook, Straus, Tuttle, Kelsey, Langé, Matas, Gant, Beach, and others. To-day, therefore, these diseases are receiving rational treatment from a scientific standpoint.

Whereas in the past the consideration of this part of the anatomy included only such diseases as piles and fistulæ, to-day we intelligently cope with cancer, stricture, syphilis, tumors of whatever nature, and the terrors of the same are greatly reduced.

The person who considers that only slight diseases are within the range of this special field must be advised of the resection of the rectum by Kraské's operation, of anastomosing the colon to the rectum, of the resection of strictures, of the two colostomies, and other major operations pertaining to this special surgery.

The writer begs pardon for a little personal pride in that it has been just twenty years since he embarked in this special study and urged upon his professional brethren the importance of the work. How much of this great advance from a neglected and a somewhat obscure subject to its present prominent position in the scientific world is due to his efforts, he would beg to submit to his brethren. He is fully repaid if he has been the means of encouraging the thought in others to accomplish what they have in this line, for beside their work he considers his own insignificant.

In order that some practical points may be embraced in this paper, I will take the liberty of giving some consideration to most of the important diseases of the rectum which require surgical treatment. First in the list, in a practical way, should be *Hemorrhoids*.

The writer will be excused from discussing the *palliative* treatment of any of these rectal affections, first because the time given would not permit of it, and secondly for the reason that he can scarcely recall a single rectal affection which calls for *palliative* treatment. To the contrary, he believes that all of them should be treated surgically.

Referring to hemorrhoids, it is best to give but two divisions, viz., *external* and *internal*. The external variety, of course, is

formed outside the sphincter muscle. It may appear superfluous to so state, but I do it purposely, for the reason that in many, very many cases of inflamed *external* piles it is the common practice with physicians to try to place them by force in the rectum. I do not say *back* in the rectum, for they did not have their origin in the rectum, never were there, and no effort of course should be made to push them in. Of whatever kind (external) or of whatever size, they should be allowed to remain *outside* the sphincter muscle.

Suppose, therefore, a case of this kind is under observation, what shall be the treatment? Mr. Erecsen said, "All external piles should be cut off." No better injunction can be given now. You will permit me to call attention to the difference between *cutting* an external pile *off* and "letting out the clot of blood" described by most all authors. The latter plan in my opinion should never be indulged in; far better leave nature to reabsorb the clot than to add to the inflammatory process by doing a half job. All external piles should be "cut off."

Internal hemorrhoids is a much more serious condition. In a matter of diagnosis I desire to say what may appear to you to be a very contradictory statement in so far as authors are concerned, viz., every disease or pathological condition in the rectum can be detected with the finger, except one—internal piles in a quiescent state. I say this is in contradiction to the authorities who direct that a digital examination be made in order to detect piles, and that the speculum be used in detecting any special or all manner of disease in the rectum.

What shall be done with internal piles? It would not be dogmatic to say that there is but one thing to do—operate—for no local application, as ointments, etc., ever cured an internal pile. Should internal hemorrhoids be operated on in the *inflamed* state? By all means, for thereby you stop the inflammatory process and remove the inflammatory deposit, at the same time cure the patient of his disease.

What is the best operation for internal piles? In the experience of the writer, covering twenty years and several thousand operations, he unhesitatingly says that the ligature is the safest, easiest of execution, quickest of cure, most radical in results, of all methods. Next to this plan, of course, is the clamp and cautery.

The injection of acids, etc., into the pile tumor is dangerous, unsurgical, and not attended by radical results.

*Fistula in Ano.* Fistula in ano should receive more serious consideration from the profession than it does. A more destructive local condition can hardly be imagined. Beginning, as it always does, with an abscess, it is fraught from its start with danger, both constitutional and local. If physicians would bear this in mind and at the very incipiency of the trouble establish free *drainage*, the comparative number of cases of fistulæ would be greatly reduced.

I have taken occasion to dissent from the division of fistula in ano as given nearly universally by authors. It is of very little significance to say that a fistula is an external or an internal one, and it is simplified not at all to add that the sinus may be complete. What is of much more purport is to indicate whether the condition is going to do little or much harm. The writer has therefore divided these fistulæ into progressive and non-progressive types. It will be observed that there is a class of fistulæ which is limited to a narrow channel, said channel being lined by a tough cartilaginous membrane miscalled pyogenic, which can be left for an indefinite time because non-progressive; another class, where the pus formation and disintegration of tissue are very rapid, which should be called *progressive*, and which demand immediate attention. To the ravages of this latter class I have often seen one or both buttocks destroyed, the perineum involved, and the peritoneal cavity encroached upon. Patients suffering from this condition often die from a slow or rapid sepsis.

In a matter of diagnosis authors lay great stress upon the matter of finding the internal opening of a fistulous track. How very unnecessary this injunction is can be estimated when it is affirmed that if an external fistula exists, it calls for an operation, and that during said operation the internal opening, if any, will be discovered. And yet I have known surgeons to refuse to operate because the internal opening could not be detected.

As to the cure of fistula in ano, it must be positively asserted that it is a surgical disease and must be cured by surgical means. The text-books on surgery very inadequately describe the operation. Copying from one *verbatim*, the directions are as follows:

"Insert a grooved director into the external opening, push it into the bowel, catch the distal end on the finger, pull it out of the anus, and then divide all the tissues remaining on director."

Such a procedure would not cure one in fifty cases. Each individual sinus must be traced and freely divided, the bottom of all channels freely cut through or curetted, and the edges trimmed closely. Occasionally we find cases in which union by first intention can be secured by bringing the edges together, but these are the exceptions. Allingham once said to me that it required more dexterity and delicate surgery to cure a complicated case of fistula in ano than any condition that he knew of. I quite agree with him.

*Prolapse of the Rectum.* In regard to prolapse of the rectum, the writer desires to say that he regards it as a very infrequent condition in the adult. Twelve cases will cover all that he has seen in twenty years' experience. In the infant, for anatomical reasons, it is much more frequently met with.

In the adult it always calls for surgical treatment. The methods proposed have proven very unsuccessful. The linear lines drawn by the thermo-cautery, suggested by Van Buren, are very inefficient. The taking out of elliptical pieces and suturing the edges is a slow and not very effective operation. The application of acids to the surface of mucous membrane is unsurgical and should not be thought of. The writer has proposed and practiced a free circular incision around anus, and drawing down the prolapsed membrane, which is superfluous, and removing it, and then stitching membrane to the true skin.

*Pruritus Ani.* It would appear at first thought that pruritus was an affection to be treated medically and not surgically. But I am sure that every physician here has been convinced of the futility of such methods. In all cases, especially of long standing, where the so-called "scarf skin" has formed, the most efficacious plan will be found to be a thorough application of the thermo-cautery, under chloroform, or what is better, a clean dissection of all the skin involved.

*Fissure of the Rectum.* Fissure of the rectum I believe to be a misnomer, because it is impossible for the pouch of the rectum to become fissured, as is intimated by the use of the term. Fissure of the anus is a much more appropriate term.

This affection, too, I believe, should call for surgical and not palliative treatment. It is so simple of cure by gentle divulsion of the sphincter muscle that it looks cruel to subject a patient to many weeks of treatment by burning local applications. If the physician is averse to giving an anesthetic for this purpose, let him practice moderate stretching several times with a small divulsor, and a rapid cure will be effected in the greater number of cases.

A distinction should be drawn between a fissure of the anus and an *irritable ulcer* of the rectum or anus. For the latter, free and rapid divulsion with thorough curetttement should be the treatment.

*Ulceration of the Rectum.* The writer desires most emphatically to dissent from the view that benign ulceration of the rectum is of frequent occurrence. To the contrary, he is on record as believing that it is one of the rarest conditions found in this portion of the gut.

I would respectfully ask, especially of those who have given much study and observation to diseased conditions of mucous membrane anywhere, if it is not a rare thing to notice an innocent ulceration of the same? If, on the other hand, a well-defined ulcer is observed with elevated edges and a hardened base, is it not invariably suspected as being of constitutional origin? Therefore, I would beg to say that if such condition is found in the rectum, the question of an innocent origin is at once dissipated and the cause sought from conditions much more serious.

Among the list of such causes are syphilis, cancer, and tuberculosis. Valuable time indeed would be lost if such diagnosis were neglected. In order then to present succinctly my subject, I will take this proposition as granted. How shall we deal with ulcerations the result of these separate causes? 1. Tuberculosis. 2. Syphilis. 3. Cancer.

1. *Tubercular.* It is now a well-recognized pathological fact that tuberculosis may select any tissue for invasion. A local lesion early recognized, diagnosed, and properly treated will oftentimes save the patient from general tuberculosis. The rectum is a favorite seat for such deposit. Its nature is so insidious that it is seldom detected early, and if seen is taken for

something less serious. Being local in character, it precedes any constitutional symptoms, hence is easily overlooked. The microscope is of much diagnostic aid in the affection.

When a diagnosis is once made, there should be no hesitancy in applying the proper treatment. Local remedies are perfectly *nil* in their effect, and such methods are but temporizing with the disease. It should be recognized that only surgical means will avail any thing. The curette and knife are the only remedies to be thought of. The idea, of course, is to get rid of the diseased, infectious tissue. The same rule that is observed in removing a malignant growth should be practiced in operating for a tuberculous ulcer, viz., excise all the affected tissue. For this reason I much prefer the knife. The curette is a most excellent adjuvant to the knife, but when used alone is ineffectual. Indeed, the actual cautery will be found of greater service in eradicating this diseased structure than the curette.

2. *Syphilitic.* The writer is on record as believing that sixty per cent. of strictures of the rectum are caused by syphilis. This is the percentage claimed by him, and so published ten years ago. He has no reason to-day to retract the assertion. He is glad to record the fact that he has been in receipt of many letters from prominent men in the profession, both in this country and in Europe, affirming the proposition.

This was stated with some emphasis at a time when syphilis—secondary—was regarded as a small factor, or no factor at all, in causing ulceration and stricture of the rectum. He can recall the time when most eminent writers thought that the only manner in which syphilis could play a part in producing ulceration of the rectum was by the extension of chancrous pus. Instead of accepting this theory, the writer has often asserted that chancrous pus can in no manner produce syphilitic ulceration of the rectum. To the contrary, it is by secondary deposit alone that syphilis manifests itself in the rectum, and upon this theory only can a proper treatment be afforded.

I know that I will be pardoned here if I offer an explanation of certain quotations of a distinguished friend of mine in the East, who persists in saying that I affirm that ninety-nine per cent. of the cases of stricture of the rectum is caused by syphilis. In the writer's book on Diseases of the Rectum, Anus, and

Sigmoid Flexure will be found these words: "If a case presented, and after a thorough examination it could be affirmed that it was not *cancer*, in ninety-nine cases out of one hundred it would prove to be *syphilis*." In explanation it is argued that syphilis and cancer are so akin in symptoms, both clinical and general, that it is often an impossibility to diagnosticate between them; that syphilitic stricture is unlike all other forms of stricture save cancer. Therefore, if it proves not to be cancer, it must of necessity be syphilitic. I am sure that you can see the difference between such a statement and one affirming that ninety-nine out of every hundred cases are syphilitic.

What, then, are we to do with syphilitic ulceration and stricture of the rectum? Permit me to say that after the disease assumes the fibrous nature which constitutes a stricture, it is utterly incurable by either local medication or by general means. There is but one course to be pursued looking to a radical cure, and that is the entire resection of the affected tissue. The question then arises, can this be done? Unfortunately, the case in which such a procedure could be practiced would be a rare one. What course is left? Nothing save proctotomy and colostomy, either one of which is only a palliative remedy. This is indeed a melancholy class of patients, as incurable as cancer, with the disadvantage over the latter, that life is for a much longer period made a thing of much misery and suffering.

3. *Cancerous.* Cancer is yet the "horror of horrors" to the medical man. In its presence we bow submissively in ignorance and acknowledge our inability to cope with the monster. Located in certain regions of the rectum it assumes new features of torture, and soon evades the limits of surgical interference. And yet surgery has done much in the last decade or two looking to the eradication of this terrible disease.

In times past it would have been thought both unwise and unsurgical to have attempted the removal of the entire rectum for cancerous or other disease. To-day it is often practiced. Let us for a moment consider whether such attempt is justifiable, and if so, how often? No one denies the anatomical and surgical fact that the rectum can be removed even in its entirety, but under what conditions should such surgery be advocated? In this day of performing great surgical feats, there is such a thing

as overstepping the bounds of all reason in order to show great dexterity. Because, forsooth, one stomach was removed and the patient lived, is no reason that a search should be instituted for stomachs to remove.

It is a principle in surgery that unless all tissues involved in the cancerous disease can be removed, an operation is useless. It is a well-recognized fact that the rectum is contiguous to a large distribution of glands and lymphatics. Cancer situated above and not involving the sphincter muscle is often an insidious disease. When the mass has so far extended as to embrace the whole rectum, it is safe to infer that the infiltrative process has so extended that it has embraced structures which can not be removed; hence to resect simply the mass in sight would avail nothing. Much better to leave such a patient to the tender mercy of an opiate than to further wreck life by a fruitless major surgical operation.

If, on the contrary, the growth can be circumscribed, and the assurance had that *all* diseased structures can be removed, then resection, or rather expiration, should be advised.

I desire to say in this connection that the operation is much more preferable than to perform a colostomy in such a case. The latter can only be palliative, if that, while the former anticipates a radical cure. There have been a number of methods proposed for accomplishing the removal of the rectum, but the writer prefers to avoid such operations as Kraské recommends if a lesser one will accomplish the purpose. I have practiced removing portions of the rectum by the simple circular incision and a careful dissection of the gut with the fingers. In a few instances I have removed the coccyx, as it materially increases the field in which to work.

Walker, of Detroit, and Tuttle, of New York, as well as Alexander, have in my opinion improved on Kraské's method. It is a very serious question to decide whether this operation should be recommended. I must say that but very few cases have fallen under my observation where I thought it justifiable to remove so much of the rectum. Infiltration and glandular enlargement must certainly take place before the whole rectum can be blocked with or by a malignant growth. Upon several occasions I have had to abandon the operation because of this

fact, and regretted that I had ever begun. I would much prefer to remove the rectum for syphilitic disease than for cancer.

*Disease in the Sigmoid Flexure.* Before closing, you will permit me to call your attention to a non-surgical subject that has interested me for a long time, viz., disease in the sigmoid flexure. For want of a better term I have styled the trouble *sigmoiditis*. This term should be disassociated from the secretion neurosis of the colon, such as pseudo-membranous colitis, colitis tubulosa, membranous colitis, etc., and from a syphilitic or tubercular manifestation in the colon. O'Bierne, of Dublin, demonstrated that the flexure and not the rectum was the receptacle of the fecal mass; that by an anti-peristaltic movement the feces were carried back and deposited in the flexure if not voided. My investigations have proven this to be true. The water is rapidly absorbed and the dried fecal mass is left in the flexure to irritate. As a result we have a congestion, inflammation, and ulceration of the flexure. These patients suffer from a discharge of mucus or blood, or both, and ultimately with a muco-purulent discharge. This condition is easily mistaken for a flux or cancer. They can be quickly relieved by an early diagnosis and proper local treatment. Internal administration of medicine does no good, but a great deal of harm. The instruments to be used are a bulb syringe and a Wales bougie. The agents, large quantities of warm water, or boric acid water, fluid hydrastis, iodoform oil, etc. They will often clear up as if by magic.

I had hoped to consider the subject of the surgical treatment of ano-rectal imperforation, but my paper is already too long.

Again I thank you, gentlemen, for your many courtesies.

923 Fourth Avenue.

## GASTRO-INTESTINAL DISEASE.

### STRICTURE OF THE ESOPHAGUS.

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The esophagus is one of those organs which most physicians would concede on general principles to the surgeon, since it is not liable to constitutional disease in the limited sense, and since its normal function is as purely mechanical as can well be imagined. Unfortunately, anatomic difficulties are so great that radical operations on the esophagus are limited to partial involvement of the upper part of the tube, and also require that various other circumstances than mere location of disease shall be favorable. Thus it frequently happens that it is impossible to carry into practice the theoretic surgical indication, so that many cases properly remain in the hands of the medical attendant, while, in the majority of instances, a joint medical and surgical consideration of the conditions is desirable.

The diseases of the esophagus may, with remarkably few exceptions, be classified under the head of strictures, using the word stricture in a general sense. Diphtheria may locate in the esophagus—though very rarely. Measles probably in the majority of cases occasions some spots of affection of this organ, and, to a less degree, the same is true of scarlatina, herptic pharyngitis, and other inflammatory conditions, even those known as rheumatic or as simple catarrhal, which commonly occur in the upper extremity of the alimentary canal. But all such conditions rarely occasion dysphagia, while the process, if infectious, is almost invariably checked by the gastric juice, or, at least, in the stomach. The only local inflammatory lesion of the esophagus which is apt to produce serious interference with swallowing is an intense one, due to swallowing hot water, alkalies, strong acids and other corrosives. Traumatisms are serious rather from the involvement and subsequent cicatricial contraction of external structures than from direct effect on the esophagus itself. Traumatism occurs most frequently from swallowing fish bones,

then from swallowing other bones, fruit pits, coins, etc., rarely from missiles or weapons penetrating from without. Occasionally a foreign body lodges in the esophagus so as to occlude it directly, without immediately causing traumatic injury. But in such cases traumatism almost always follows from efforts at removal or from pressure-ulceration if neglected.

Paradoxically, dilatation of the esophagus is really to be considered in the same category as stricture, since it either forms above a stricture—this is the rule in malignant cases and particularly at the lower part of the tube—or the dilated portion becomes filled with food or liquid and presses on the normal portion of the tube. Occasionally a dilatation exists without causing an obstruction to the passage of food. In such cases the harm is due to the weakening of the muscular tissue of a certain part of the tube and to the stagnation and decomposition of particles of intercepted food.

Neoplastic obstructions, involving the esophagus itself, may be syphilitic, tubercular, or possibly due to other forms of granulomatous disease, or they may be true neoplasms, carcinoma, sarcoma, adenoma—usually polypoid—fibroma, myoma, myxoma, lipoma, lymphoma, angioma, lymphangioma, etc. The last few, however, are rather possibilities than actually reported occurrences, and, except as a matter of extreme diagnostic caution, we may omit all of this class except cancer, syphilitic gumma, tubercular induration, and polypus.

Extrinsic conditions affecting the esophagus include the pulling action of cicatrices, producing dilatations, and pressure by aneurisms, abscesses, vertebral and fascial disease, mediastinal tumor, enlarged lymph nodes, bronchiectasis, pulmonary growths, pleural accumulations, etc. Cicatricial dilatations often result from punctures of the esophageal wall by a sharp body, accidentally swallowed. Such dilatations tend to grow larger from the repeated accumulation of food in them, and sometimes from the actual spread of the cicatrizing process. Stenosis by pressure from without, if of marked degree, is usually to be ascribed to aneurism. I have noted stenosis occurring from varicose veins of the esophagus, due ultimately to interference with the portal circulation by sclerosis of the liver. About thirty cases of such varicosity have been published, but the diagnosis is usually made

at the autopsy, having first been suggested by hematemesis or by theoretic probability. A noticeable dysphagia is rare.

CASE 1. Seen in consultation with Dr. Dunham, October, 1896, was that of a woman of forty-seven. Twenty years before, she had had diphtheria, but there was nothing to suggest an involvement of the esophagus or that this point has any significance in the development of the trouble. Four or five years previously she began to notice dysphagia with solids; the symptom has increased gradually, with irregular remissions. At least two years previously, and occasionally since, she had raised blood in small quantities after choking on something swallowed. Dr. Dunham had dilated the esophagus by passing a rather rigid soft rubber stomach tube at intervals, sometimes meeting with so much resistance that the attempt failed. I could not introduce a No. 10 catheter-end thick-walled stomach tube, but passed without much difficulty olive tipped bougies corresponding to No. 28 and No. 30 of the French urethral scale. An obstruction was encountered, beginning fourteen and ending twenty and a half centimeters from the alveolar arch, and a little blood but no tissue was brought away on the larger bulb. The age of the patient suggested cancer; the duration of the trouble and absence of other symptoms were against this diagnosis. The presence of blood, both on the bulb and appearing without mechanical interference except as the passage of food may be so considered, suggested one of the conditions involving the esophagus itself. Neither history, symptoms nor physical signs enabled a positive diagnosis to be made. I asked the advice of my friend, Dr. Judson Deland, of Philadelphia, especially regarding the advisability of operation. After reviewing many of the conditions already referred to in the general consideration of the subject, he decided that carcinoma was most plausible, and advised consideration of the case by a surgeon. This, however, had already been refused by the patient. The patient has remained nearly *in statu quo* for over a year.

CASE 2. Was mainly under the treatment of Dr. Eugene A. Smith, who has very kindly allowed me the use of his notes in this series.

"On October 25, 1896, a strong, well built German brewer consulted me, complaining of difficulty in swallowing. His age

was thirty-two; he had been married ten years, had four children, and gave a history free from tuberculosis and cancer. His father and mother were still living. When nineteen years old he had gonorrhea, a suppurating bubo, and several ulcers of the glans penis. He was then in the German army, and the surgeons did not treat him with internal medication for his venereal trouble, nor did they speak of his infection as syphilis. He also denied any of the sequelæ of syphilis while a soldier. From the age of nineteen he had frequently swallowed glass as an exhibition of bravado. He was in perfect health until thirteen weeks before consulting me, excepting numerous attacks of nosebleeding some years ago. For several years he had consumed from two to two and one half gallons of beer daily while at his brewing work.

"Thirteen weeks before seeing me he noticed a difficulty in swallowing food, which increased until seven weeks later he could not swallow solid food. He then consulted several physicians, who failed to help him. On examining him I found his weight 160 pounds, a loss of ten pounds, and his physical condition perfect, excepting the scars of venereal ulcers on the glans penis, and some cervical lymph nodes and the epitrochlear lymph node at the right elbow triflingly enlarged. Trying an esophageal bougie I could not pass the smallest, which was of the size of a No. 27 French urethral sound, beyond a point of constriction ten inches from the teeth. With the hope of benefiting a stricture of syphilitic origin I ordered mercurial inunctions and iodide of potassium in ten-grain doses thrice daily. On November 1st he reported, much elated, that he could swallow meat if finely chewed and slowly swallowed. He could also pass the bougie, which I directed him to continue doing daily. He was, however, hoarse and coughing, obliging me to reduce the amount of iodide of potassium, to which I ascribed his catarrhal symptoms.

"On November 22d he could no longer pass the bougie, swallowing of any but liquid food was again impossible, and he had noticed for some days pain passing from the front of his chest through to the back.

"On December 6th his weight had fallen to 151 pounds, and he reported vomiting some mucus and blood. At this time the mercurial inunctions had produced a moderate salivation, and for several weeks longer the mercurial impression was continued until further hope of relief in this direction was abandoned.

"Early in January his weight had fallen to 140 pounds, swallowing of liquids was attended with difficulty, and the attempt to pass a bougie caused violent retching with raising of bloody mucus.

"On January 17, 1897, I opened the stomach by a median-line incision, and finding a firm mass encircling the esophageal orifice through which I could not work even a whalebone bougie of the smallest size, I proceeded to make gastrostomy according to Witzel's method. Within a few days he was fed regularly by the new route, taking eggs, milk, meat extracts, and even water, and in two weeks found he could again swallow liquids and semi-liquid food by the mouth. He gained in weight and strength for several weeks.

"About the end of February he complained of pain in the back, and began to cough and raise a muco-purulent expectoration. Early in March I detected dullness on percussing over the lower portion of the back on both sides, showing involvement of the lower lobes of both lungs by the neoplasm. From this time his digestion of food was more and more disturbed. He began to have acid eructations and burning with extreme gastric pain after taking food. He lost power to swallow, and his weight fell off rapidly. The gastric fistula developed irritability, and its orifice was surrounded with an eczematous inflammation. I now referred him to Dr. A. L. Benedict for examination and treatment, and later visited him at his home. He progressed rapidly to his end after April 10th, and mainly because of pulmonary destruction and inflammation, accompanied by profuse expectoration of an offensive purulent material and violent coughing. He was markedly emaciated when he died on April 24, 1897, three months and seven days after the gastrostomy.

"It is of interest to note that his life was undoubtedly prolonged in fair comfort a notable number of days by the operation and the consequent artificial gullet. Witzel's method of gastrostomy in this case attained the objects sought in producing gastric fistula, namely, the prevention of leakage with convenience of feeding. In the oblique fistulous tract I used a section of an English gum elastic catheter. Over the outer end I slipped a short piece of soft catheter, which I constricted with the ordinary clasp used on the tubes of douche bags. The piece of

catheter was at times withdrawn and replaced, and until the malignant disease in its progress involved more and more of the stomach itself there was no irritation in the fistula. On the removal of the tube, however, gastric contents escaped in small amount until it was reintroduced and clamped."

On March 24th I (Benedict) passed the esophageal bougie twenty-two centimeters from the incisors without difficulty. Then so much resistance was encountered that I did not like to force it farther. The patient intimated that he could pass it himself, so I let him take the staff in his hand. He forced it two centimeters farther, but was using so much force that I stopped him. A slight hemorrhage occurred, noticed both on the ivory bulb and exuding from the fistula tube. Stomach contents two hours after two raw eggs and a cup of beef broth were entirely free from starch, but showed some sugar—evidently saliva still leaked down through the esophagus. There was no free hydrochloric acid nor free acidity by congo red or benzo-purpurin, but there was a strong odor of acetic and butyric acids. Albuminous digestion, however, was very fair, as could be judged from the chemic test. There was only a slight precipitate of syntoin, a moderate one of albumose by ammonium sulphate, and a considerable precipitate of peptone. Although the stomach was somewhat large, motility was fair, as determined by the amount of chyme. The filtered gastric contents plus hydrochloric acid had only a slight dissolving action on egg albumin. He was advised to use gruels and sugar in addition to the almost absolute proteid diet which he had employed for several days, and to swallow all the saliva he could. Hydrochloric acid was introduced through the fistula. Fowler's solution was also used, partly as an antiseptic, partly with the hope of delaying the malignant process. March 26th, two hours after the simplest test meal, egg water, digestion was found almost at a standstill, without free acid, with no distinct precipitation of albumose or peptone, and with only a faint band of color above an alkaline solution of copper. The urine was reddish-yellow, with an abundance of indican and with marked coloration above nitric acid, otherwise normal qualitatively.

The autopsy showed the following abnormalities (the skull was not opened; otherwise organs not mentioned were normal):

Lungs much adherent except in front; cavity of the size of walnut in upper lobe of right, red hepatization lower lobe of right, congestion with crepitation lower and posterior portion of left lung. Stomach reaches as low as umbilicus in middle line, displaced upward and to right by distended splenic flexure, undoubtedly a *post-mortem* change, mucous membrane gray and catarrhal, with petechiæ. Esophagus patulous from below to second rib, but lower portion inclosed in a growth situated mainly behind the stomach and involving the tail of the pancreas. Lesser curvature of stomach adherent to inferior surface of left lobe of liver, which showed numerous metastatic tumors, pearly-white and the size of a pea. Otherwise the liver, except for markings of ribs and sternum and adhesions to stomach and to diaphragm, was normal.

I am inclined to think that the patient hastened death by forcibly passing the bougie. Although surgeons have used much ingenuity to avoid a straight fistula into the stomach, it seems to me that the old, simple operation is better, from the standpoint of a medical man observing such cases after operation and endeavoring, not to save life, but to prolong it. The tendency of all such fistulæ is to become straight after the lapse of some time. The endeavor to make a valvular passage into the stomach is, nevertheless, highly commendable in cases of non-malignant stricture of the esophagus, when the stomach is in practically normal condition. In necessarily fatal cases I would urge the making of a simple straight fistula, not only on account of the comparatively short period of life involved and the frequent indication for making operation as rapid as possible, but mainly for the sake of allowing the medical attendant to introduce specula, electric lights, etc., to note the progress of the case, and, possibly, for allowing the surgeon to make minor local applications to metastatic points or other parts of the stomach requiring such interference and for expediting lavage, etc. All this is by no means a criticism of Dr. Smith, who not only acted in accordance with the best surgical opinion of the day, but who had every reason to expect a longer duration of life. Regarding the etiology of cancer in a person so young, the irritation of glass may have been an initial factor, giving rise to transient irritation and recurring mild inflammation.

CASE 3. Was that of a woman of fifty-five, who, in the summer of 1896, had the right breast removed on account of cancer. During the winter of 1896-7 she suffered from several attacks of bronchitis of moderate severity. March 29, 1897, she presented herself, complaining of gas in stomach and bowels, slight constipation, and general depression. The physical examination revealed nothing but a dilatation and marked sagging of the left end of the stomach. About three weeks later she had an attack of dyspnea, and I found the right lung almost solid in front, inferiorly, with coarse rales above and with the left lung acting vicariously. There was little fever, and I considered the condition of the lung largely dependent on the immobility of the right side, from the removal of the pectoral muscle. The pneumonia cleared up in about a week. On May 6th, the gastric symptoms continuing, I endeavored, in spite of the patient's weak condition, to wash out the stomach and introduce the diaphane, partly for treatment, partly to obtain information. To my surprise—for there had been no complaint of dysphagia—the tube, No. 11, passed only  $28\frac{1}{2}$  centimeters; the diaphane inclosed in a No. 10 tube, only 30 centimeters. Two days later the No. 40 esophageal bulb was passed 32 centimeters. I had, of course, intended to try smaller sizes if the large one failed, but did not on account of the patient's condition. Shortly afterward a consultation was held with Dr. Hartwig, who decided that operation was not justified. Meantime a few small masses had appeared in the scar of the former operation. This patient never manifested absolute dysphagia, though she ate very little and mostly of liquid or soft food. The pneumonic condition soon returned, though never to a degree alarming of itself. She died August 18th, having lived for a month or more with remarkably small amounts of nourishment and in an extreme state of emaciation. Autopsy was not allowed, so that the exact condition must remain a matter of conjecture. It was moderately certain that the stricture of the esophagus was due to pressure from without, not connected with arterial disease, and antedating the obvious pneumonic condition. I could not help thinking that there might have been an extension of the cancerous process along intercostal or deeper lymph channels, perhaps causing a genuine cancer of lung tissue. But neither metastasis

nor extension of a mammary cancer is a probable cause of esophageal stricture, even of extrinsic type.

CASE 4. Was referred November 14, 1896, by Dr. Marcell Hartwig. Four and a half months previously, following some excitement, hiccup and regurgitation of small quantities of food (not vomiting) began and had continued with only temporary periods of relief. Water did not occasion the spasm, but flavored beverages, such as coffee and soup, did. Much emphasis was laid by the patient and his wife on a peculiar rattling located by them at the level of the larynx. This symptom, however, occurred at the office, and seemed to be nothing more than ordinary gastric rumbling. A large esophageal bulb was passed to the stomach with some resistance, apparently spasmodic, felt especially on withdrawal from a depth of twenty-three centimeters, reckoning from the lips. I believe it is quite characteristic of spasm, as contrasted with organic stricture of the esophagus, that the resistance of the former is rather on withdrawal, whereas a genuine stricture, if it allows the bulb to pass at all, is overcome in large degree by the first passage of the sound. In spite, therefore, of the patient's age, forty-six, a good prognosis was given. Treatment consisted in cannabis indica and spirit of peppermint regularly, and tablets of nitro-glycerine p. r. n. Later valerian and sumbul were used alternately with cannabis indica, and the passage of the bulb was repeated at intervals of from three days to a week. On one occasion galvanism was tried, but with no apparent immediate result, and, owing to my general lack of faith in electricity, this method was not persisted in. One of the chief complaints had been of loss of weight, though not extreme, and although the hiccup was quite promptly mitigated, the patient did not gain in weight and showed evidences of subacidity of the stomach, so that hydrochloric acid was prescribed as a digestant. On December 5th I introduced two ounces of malted milk through the stomach-tube, this being one of very few instances in which I have resorted to gavage. During December the hiccup almost disappeared, and the passage of the sound was discontinued. A sensation of constriction about the lower part of the chest was complained of, and was relieved somewhat by liniments.

During January, although the hiccup did not return, the

case assumed a more sinister aspect. "Red indican" was present in the urine on several examinations, the sclerotics showed somewhat yellowish, and the skin became sallow; once a doubtful reaction for bile pigment was obtained, while there was complaint of pain in the epigastrium, to the right of the median line. It was significant, however, that the gall-bladder could not be palpated, and the suspicion grew more and more probable that the sallowness was a cancerous cachexia. On Feb. 20, 1897, lavage was attempted, with a No. 11 tube. The tube kinked and could not be forced farther than forty centimeters from the lips; in other words, it lodged just about at the cardiac opening. However, quite successful lavage was practiced at this time, without passing the tube through the cardia.

Microscopic examination of mucus from the end of the tube showed nothing but mucous filaments, leucocytes, and squamous epithelium. A few days later the esophageal sound was again passed. No trace was found of the former resistance at 23 centimeters, but all sizes of bulbs except the very smallest stopped abruptly at 40 centimeters. The smallest size was not passed, as it is capable of doing damage, and as the information which might have been obtained would simply have gratified my curiosity. Meanwhile the patient had continued to complain of burning though not acute pain about the lower part of the chest. His weight had remained stationary, and he was able to take liquid and soft solid food. About March 1st there was an account of passing black and dark-green stools, but they were not saved for my inspection, so that the significance is doubtful. In general I would throw out the warning that blood, bile, etc., in stools can not be inferred with any reasonable degree of certainty from lay descriptions. At this same time the symptoms were very favorable, the patient having good appetite, the "jaundice" having disappeared, and there being no dysphagia. On March 16th the dysphagia had reappeared, so that there was some difficulty in swallowing meat, however carefully prepared and chewed. This was my last visit, as my prognosis was not satisfactory to the family. Some weeks later the patient died, death being reported as due to malignant disease.

It seems very doubtful whether there was any real connection between the spasm and the malignant stricture of the esophagus.

The symptoms of the former had been entirely removed long before the diagnosis of the latter could have been made with any degree of probability. The locations of the two conditions were distant 17 centimeters, the former being in the portion of the tube usually the site of spasm, and where the mere mechanical pressure of the larynx may give rise to a false notion of obstruction. To say whether, in this case, there really was a spasm of the esophagus, or whether merely the resistance of the larynx against the curved esophagus was felt, would be tantamount to claiming expertness or confessing inexpertness in the maneuver. If the spasm and hiccough were due to something more than the nervous cause ascribed by the patient, that is, to the incipiency of cancer, the early symptoms must be regarded as purely reflex, not local. The relief of the dysphagia shortly before my discharge from the case I am inclined to attribute to a sloughing away of tissue, marked by one or two tarry stools. Such a cause of improvement in cancer is well substantiated for other locations. The diagnosis from biliary lithiasis was based mainly on the lack of a palpable gall-bladder. Some men sneer at the idea of confusing jaundice with cancerous cachexia; personally, I can not distinguish them at the outset, nor do I believe that there is any thing essentially characteristic about malignant cachexia. Good clinicians have diagnosed gastric cancer and supported their diagnosis by the observation of a cachexia in cases that have subsequently been cured of dilatation and catarrh.

CASE 5. The unmarried daughter of patient No. 3 has recently complained of a choking sensation in swallowing and the feeling that food lodged in the esophagus. Passage of the bougie has shown no constriction nor manifest obstruction except at the larynx, where some obstruction is usually encountered. The patient is twenty-three years old, single, somewhat depressed and "nervous," but not hysterical in the ordinary sense. She has some sub-acid dyspepsia. Her mother's symptoms were almost negative, so far as the esophagus was concerned, so that mimicry is out of the question. Relief has been already secured from general treatment, and the case is reported as one of functional spasm, in contrast to the others. The possibility of hypertrophies at the base of the tongue must be considered in such cases.

## A SYLLABUS AND REMARKS ON INTESTINAL OBSTRUCTION.

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Intestinal obstruction may be classified as: (a) Congenital (antenatal); (b) acquired (postnatal); (c) pathologic anatomy; (d) clinical; (e) mechanical.

- (a) Congenital (antenatal) is produced by {
  - 1. Stenosis.
  - 2. Peritonitis.
  - 3. Absence of parts.
  - 1. Invagination.
  - 2. Stricture.
  - 3. Strangulation by bands and through apertures.
  - 4. Volvulus.}
- (b) Acquired (postnatal) is produced by {
  - 5. Foreign bodies.
  - 6. Fecal masses.
  - 7. Neoplasms.
  - 8. Tumors (external and internal to bowel).
  - 9. Gall-stones, enteroliths.
  - 10. Paralysis.}
- (c) Pathologic anatomy. { This form of classification groups the kinds of obstruction into similar cases.
- (d) Clinical. {
  - 1. Acute.
  - 2. Chronic.}
- (e) Mechanical. {
  - 1. Pressure external to bowel.
  - 2. Change of bowel outline.
  - 3. Blocking of bowel lumen.}
- Factors which aid in diagnosing intestinal obstruction. {
  - 1. Peritonitis.
  - 2. Hernia.
  - 3. Ulceration.
  - 4. Mesenteric gland disease.}

Seventy per cent. of subjects having bowel obstruction have suffered from peritonitis. In three hundred personally recorded autopsies ninety-six per cent. had suffered from local peritonitis. The sphincters (1) cardiac orifices, (2) pylorus, (3) ileo-cecal valve, (4) anus—and the flexures, (1) hepatic, (2) splenic, (3) sigmoid, (4) duodeno-jejunal, are weak points of the digestive tract, liable to disease and obstruction.

The etiology of local peritonitis is:

- 1. Muscular trauma. {
  - (a) The psoæ.
  - (b) Diaphragm.
  - (c) Diaphragmatic pillars.
  - (d) Abdominal.}
- 2. Migrations of pathogenic microbes or their products.
- 3. Ulceration of mucosa and abrasions at flexures and sphincters.
- 4. Perforations.
- 5. Post-operative.
- 6. Hernia.
- 7. Mesenteric gland disease.

Peritonitis causes one third of all intestinal obstruction by

Symptoms of peritonitic obstruction.

Invagination causes one third of all intestinal obstruction by

The localities of invagination.

Kinds of invagination.

Age of patients.

Etiology of invagination.

Name of the parts of an invagination.

Symptoms of invagination.

Prognosis of invagination.

1. Bands and adhesions.
2. Omental bands and adhesions.
3. Strangulation through apertures and slits.
4. Contractions of the mesentery.
5. Normal structures abnormally attached, as the appendix, snares, and loops of intestines, Meckel's diverticulum, pedicles of tumors, and appendicæ epiploicæ.
6. Paralysis.
7. The chief local peritonitis occurs in the large bowel.
8. Attacks men and women about the same.
1. Complete obstruction (gas and stool).
2. Vomiting.
3. Tympanites.
4. Peritonitis.
5. Periodic pains; a five to six-day course.

Prognosis—without surgery almost always fatal.

1. Projecting one segment of bowel into an adjacent one.
2. Subsequent strictures, paralysis, perforation, and peritonitis.
1. Ileo-cecal and ileo-colic, 50 per cent.
2. Enteric, 30 per cent.
3. Colic, 20 per cent.
1. The inflammatory variety.
2. The invagination of death (non-inflammatory).
3. Invagination is nearly always downward.
1. One fourth of all invaginations occur in infants.
2. One half of all invaginations occur before ten years of age.
3. Invagination is a disease of childhood.
1. Irregularity of the muscles in the gut wall.
2. Lack of control of the cerebro-spinal system over the sympathetic.
3. Invagination doubtless frequently arises and disin-vaginates, for I was compelled to suture the invagination in position when experimenting on dogs.
1. Outer layer (intussuscipliens).
2. Inner and middle layer (intussusceptum).
3. Apex (where it first sloughs).
4. Neck.
1. A sudden onset of periodic exacerbations of colicky pain (later becomes constant).
2. Blood in the stools in eighty per cent.
3. Severe tenesmus.
4. Tumor may be felt in rectum or abdomen.
5. Course of invagination is about five days.
6. Vomiting and tympanites are not conspicuous.
7. Infrequently a tumor can be felt.
8. Partial obstruction.
1. Perhaps fifty per cent. of cases disinvaginate spontaneously with no evil effects.
2. Some forty per cent. of invaginations spontaneously recovered subsequently die from the effects, as stricture and perforation.
3. Acute cases last about five days, while I have observed chronic cases last a year in the colon.
4. Invaginations which become pathologic are quite fatal.
5. Surgical procedures are the only rational methods, yet good results are had from forcing air into the rectum.

Volvulus produces obstruction by rotating a loop of bowel around its mesenteric axis (or one loop of bowel about another). It constitutes one fortieth or about two per cent. of all intestinal obstruction. We have (1) volvulus of the sigmoid flexure, sixty per cent.; (2) volvulus of the ileo-cecal region, thirty per cent.; (3) volvulus of the small intestine, ten per cent.

Etiology of volvulus. { 1. A long fatless mesentery (enteroptosis).  
2. Constipation.

Symptoms of volvulus. { 1. Complete obstruction.  
2. Marked tympanites.  
3. Pain, first periodic, later constant.  
4. A course of seven to ten days.  
5. More frequent in men.  
Prognosis — without surgical interference almost absolutely fatal.

Strictures of the intestines are produced by { 1. Typhoid fever.  
2. Tuberculosis.  
3. Syphilis.  
4. Dysentery (?).  
5. Catarrh.  
6. Hernia (trauma).  
7. Malignancy.

Lesions of the mucosa (ulceration) and trauma of the muscularis and serosa are accountable for many strictures.

|                                  |                                                                                                   |                                                                                                                                                     |
|----------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Location of strictures.          | { 1. Colonic strictures are five times as numerous as the small intestine.<br>2. Small intestine. | Colon. { (a) Sigmoid, 50 per cent.<br>(b) Descending colon, 25 per cent.<br>(c) Transverse colon, 15 per cent.<br>(d) Ascending colon, 10 per cent. |
|                                  |                                                                                                   |                                                                                                                                                     |
| Neoplasms produce obstruction by | { 1. Carcinoma.<br>2. Sarcoma.<br>3. Adenoma.<br>4. Myoma.<br>5. Lipoma.<br>6. Angioma.           |                                                                                                                                                     |

The above-named tumors may produce obstruction by pressure. Conspicuous in obstruction from pressure are pelvic tumors, and the rectum is the segment of the bowel affected. The portions of the bowel in order of frequency which suffer obstruction by pressure are, (1) rectum (fixed), sixty per cent.; (2) sigmoid and descending colon (fixed), fifteen per cent.; (3)

lower ileum and ascending colon (fixed), fifteen per cent.; (4) duodenum (fixed), six per cent.

|                                                          |                    |                                                        |
|----------------------------------------------------------|--------------------|--------------------------------------------------------|
| Obstruction is produced by foreign bodies, especially at | 1. The sphincters. | { Pylorus.<br>Ileo-cecal valve.<br>Anus.               |
|                                                          | 2. The flexures.   | { Hepatic.<br>Splenic.<br>Sigmoid.<br>Duodeno-jejunal. |

Gall-stones produce obstruction four times as often in woman as man. After the stone enters the intestine it enlarges. Enteroliths cause a small percentage of intestinal obstruction. Fecal masses produce intestinal obstruction, but far less than is generally supposed. The fecal masses accumulate and irritate the mucosa until a catarrh arises which produces sufficient secretion to soften the feces, permitting evacuation. I believe constipation is a neurosis of the fecal reservoir (sigmoid, descending colon, and left half of the transverse colon, that is, that portion of the colon supplied by the inferior mesenteric nerve). Hence the nerve element dominates in constipation and *ileus paralyticus* prevails.

|                                |                           |
|--------------------------------|---------------------------|
| The causes of constipation are | 1. Irregular habits.      |
|                                | 2. Neurosis.              |
|                                | 3. Improper diet.         |
|                                | 4. Heredity.              |
|                                | 5. Lack of exercise.      |
|                                | 6. Deficient development. |
|                                | 7. Peritonitis.           |

*The Diagnosis.* The practical questions to ask a patient who is supposed to be suffering from intestinal obstruction is: (1) How long since a bowel movement? (2) How long since gas has passed per rectum? (3) Has the subject had peritonitis? (4) Has he had hernia? (5) Has the subject been attacked with sudden abdominal pain? (6) The physician must then take a general view of the leading symptoms of the abdominal trouble. (7) The different forms of intestinal obstruction must be considered. (8) The symptoms of intestinal construction must be considered as regards locality, for each locality has certain modified symptoms. (9) The various affections which may be confused with intestinal obstructions should be considered. (10) Some of the factors to be considered in intestinal obstruction are, (a) pain; (b) collapse; (c) vomiting; (d) passages of stools or

gas ; (e) to a certain degree temperature and pulse ; (f) amount of urine passed ; (g) visible movements of bowel loops.

The treatment is medical or operative. The medical treatment consists in, (a) nourishment, especially per rectum ; (b) the use of opium, poultices, and cathartics ; (c) the use of electricity, ice, massage ; (d) the injection of gas (insufflation) or fluid in the rectum ; (e) rest. Surgical treatment consists in opening the bowel and attacking the cause of the obstruction.

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#### IRVING, PAULUS A., RICHMOND, VA.: MECHANICAL INTESTINAL OBSTRUCTION.

At a recent meeting of the Richmond Academy of Medicine the author presented the following report :

The patient was found tossing in bed from excessive pain. The day before he had been perfectly well, had had a copious evacuation, and ate a hearty supper. An hour after, there were violent abdominal pains, which persisted the entire night in spite of various household remedies. The pain was localized around the umbilicus, and there was considerable gastric disturbance. Enemata brought away only a slight action ; but the stomach became easier. Calomel was administered and followed by a saline, which came back. The patient was seen several times during the day, and at night was removed to Virginia Hospital. High enemata were given, but they came back only slightly stained. The patient gradually grew worse and was finally operated upon. Five or six inches above the ileo-cecal valve was found a band so tightly hugging the gut that when it was severed it made a popping noise. The patient reacted well ; but because of peritonitis and paresis, no evacuation was had until the next evening, and this was produced only after several high enemata. Recovery was uneventful. For a long time the patient had suffered from constipation and was much emaciated. It was hard to say what produced the inflammation. About ten years ago he had a similar attack, which must have been appendicitis, and the later trouble might have been due to it. The appendix was not carefully sought.

## CLINICAL MEMORANDA.

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### THROMBOSIS OF THE SUPERIOR MESENTERIC VEIN: REPORT OF A CASE WHERE ABDOM- INAL SECTION WAS PERFORMED.

HOWARD LILIENTHAL, M. D.,

*Adjunct Attending Surgeon to Mount Sinai Hospital.*

NEW YORK.

The following case is reported because it exemplifies a very rare pathological condition apparently demanding surgical interference, although, as was afterward shown, no operation could have saved the patient.

Herman B., aged fifty years, was admitted to the service of Dr. Rudisch at Mount Sinai Hospital on December 17, 1897. The family history of the patient has no bearing on the case. The man himself had been subject to diarrhea, which was a symptom, too, during the attack under discussion. For three years there had been "difficulty in breathing," and there was dyspnea at the time of his admission.

Four weeks earlier the present trouble began, the first symptom noted having been pain in the right iliac fossa, soon radiating over the entire abdomen. There was loss of appetite, dryness of the tongue, great thirst, and nausea without vomiting.

On admission the patient was found to be a rather well-nourished man in a weakened vital condition. The tongue was dry and coated; there was marked cyanosis.

Lungs: Anteriorly there was a vesiculo-tympanitic note over both sides; dullness with prolonged expiration, numerous crepitant rales and diminished breathing over right base, and sibilant rales over the entire chest. Posteriorly there was a poor percussion note over both sides, with increased voice and breathing on the right.

Heart: No enlargement; accentuated second pulmonic; pulse small, weak, and regular; some endarteritis.

Spleen: Enlarged to percussion.

Liver: No enlargement.

Resistance was felt in the entire epigastrium. Varicosities were present in the lower extremities, but there was no edema.

When the man came in his pulse was 110, respirations 28, and temperature 99.8° F. He required immediate stimulation because of the weakness of his pulse and the cyanosis.

An enema was followed at first by a loose movement, and later on by two yellow fluid evacuations. During the morning of the next day there were five loose, yellow passages, and in the afternoon seven more, two of which were involuntary. The pulse-rate varied between 92 and 102, the respirations being about 28. Repeated doses of morphine were given.

At six o'clock the same evening the patient suddenly went into collapse. There was profuse perspiration, and the pulse became imperceptible and did not respond to stimulation. At the same time an area of dullness appeared in the hypogastrium, which gradually extended upward toward the umbilicus, there being a distinct line between this dull area and the tympanitic intestinal resonance above. A stool containing blood made one think of an internal hemorrhage, and when the man's collapse became more profound every minute and another sero-sanguinolent stool appeared, the diagnosis seemed quite plain. The location of the hemorrhage, however, could only be guessed at.

Dr. Rudisch had requested that the surgeon on duty should see the patient, and in the absence of Dr. Gerster I was called in. On the way to the operating-room, where he was taken for further examination, the patient had another bloody stool and became moribund. When I saw him, an hour after the beginning of the collapse, there was no pulse, the heart sounds were all but imperceptible, there was complete unconsciousness and total absence of the corneal and pupillary reflexes. The eyes were turned upward; a few shallow and gasping respirations were noted, any one of which might have been the last. In short, the man was practically as good as dead. There was a veritable race with death as to whether the house physician should get the infusion canula into the man's basilic vein before the last gasp. Just as the patient stopped breathing the saline infusion fluid began to run into the vein. Artificial respiration was at once begun, and I ordered a drachm of the tincture of digitalis to be poured into the infusion bottle. The immediate result was dramatic. It was like the raising of the dead. The man began to breathe, then to react to the pain of the wound in his arm, which now began to bleed, to move his eyes, and even to speak.

He became perfectly conscious, and followed directions with intelligence. The pulse gradually became perceptible, then quite full and regular; I knew, however, that the hemorrhage was still going on, and as a desperate measure I determined to open the man's abdomen with the forlorn hope that I might find it possible to locate the bleeding point and check the hemorrhage. Of course no anesthetic was used; in fact, stimulation by camphor and ether and by oxygen inhalations was kept up.

A median incision about four inches long was made, having its center at the navel, and at once a large quantity of bloody, serous fluid escaped. A knuckle of small intestine, which seemed to be a fair sample of the entire gut, was drawn out of the wound for closer examination. It was deeply blood-stained, was almost black, and seemed to be filled with clots. An incision into its lumen revealed blood clot in the interior, and disclosed the fact that there was, without doubt, parenchymatous bleeding. The case was now regarded as absolutely hopeless, and the operation concluded by packing the opened knuckle of gut into the abdominal wound. About five minutes later the man breathed his last.

A partial *post-mortem* examination was made through the wound by Dr. Hauswirth, house physician. The findings were as follows:

Lungs: At right apex, healed tubercular focus with few adhesions; at right base, hypostatic pneumonia.

Heart: Pale and flabby; myocarditis; slight thickening of aorta; valves practically normal.

Liver: Not enlarged, though somewhat congested.

Kidneys: Congested; capsules adherent; slight interstitial changes.

Spleen: Congested.

Stomach: Contained bloody fluid.

Intestine: The duodenum was normal, but at the end of this part of the intestine a sharp line of demarkation between normal and hemorrhagic gut appeared. The jejunum and ileum were dark colored and hemorrhagic throughout all their coats, and this condition of the intestine extended as far as the ileo-cecal valve, where it ended sharply, the colon being merely edematous.

Mesentery: For about a half inch below the vertebral attachment this structure was unchanged, but below this point it was

dark colored and hemorrhagic, as was the small intestine. In the superior mesenteric vein a thrombus was found just above the bifurcation of the vessel and extending into its minute subdivisions, this obstruction to the circulation being doubtless responsible for the hemorrhage into the gut and for the man's death.

The examination was necessarily rather incomplete because of the circumstances under which it was made, so the exact cause of the thrombosis was not discovered, though I do not doubt that the history of long-continued diarrhea might give a hint of septic phlebitis starting in the interior of the intestine. Aside from the interest attached to the report of a rare case, this history illustrates in a most forcible manner the great value of intravenous saline infusion in the most extreme conditions. This man was almost as good as dead, yet had the pathological cause been a removable one he might have survived a life-saving operation.

679 Madison Avenue.

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GANT, S. G., KANSAS CITY, Mo.: NEURALGIA OF THE RECTUM. (*Langsdale's Lancet.*)

Sufferers with this disease are usually of highly nervous temperament, and are inclined to magnify their ailment. Coccygodynia and neuralgia of the rectum are considered under the same head by the author, as they are so much alike clinically. There is severe pain in the coccyx or sacro-coccygeal region, paroxysmal, lancinating, or burning in character. There is absence, on examination, of heat, tenderness, or swelling. It occurs more frequently in women than in men. Fissures or irritable ulcers may cause symptoms simulating neuralgia. It may be caused by exposure, sitting on cold steps or damp grass, and irregular habits, and the pain is increased by violent exercise, sitting long in one position, or in defecation. It is diagnosed by the peculiar location and character of pain without any visible cause being present. If due to a displaced coccyx, the pain is increased by manipulation of it. In every case the treatment is the treatment of the cause. Fissure, displacement of pelvic organs, fractured or dislocated coccyx, when properly treated, relieves the distressing symptoms of neuralgia of the rectum. Removal of the coccyx may be necessary.

## ABSTRACTS AND SELECTIONS.

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### SURGICAL AND OTHER HOSPITAL SERVICE: A TENTATIVE AND CRITICAL ESSAY ON HOSPITAL MANAGEMENT.\*

BY ARPAD G. GERSTER, M. D.,  
NEW YORK.

In a paper read before the New York Surgical Society, December 22, 1897, Dr. Arpad G. Gerster said that the Society being made up of only men holding hospital service, it was most fitting that a subject of this nature should be brought before them.

No one can sum up the untold blessings humanity has derived from the hospital work of medical men, through personal service and scientific discovery.

Every nation but our own has accorded to the medical expert that position and authority to which special knowledge and usefulness to society entitles him. Only in America is denied co-ordinate influence in the management of institutions the chiefest work of which is performed by medical men.

*Object.* My object is to expose and brand this barbarous and disgraceful anomaly unwise and illiberal repression. Under existing conditions high excellence in these primitive postulates of surgical success is simply a matter of the system.

A first inspection of our metropolitan hospitals will make a favorable impression upon the laymen. The more critical eye of the expert may be captivated by a sumptuous exterior or internal splendor. Nowhere can the complicated machinery of a large modern hospital be found to run with such well-oiled smoothness. But this does not constitute the main object and purpose of the existence of a hospital.

*The Soul of Hospital Work.* The *punctum salicus*, the soul of hospital, is the curing or alleviating of disease—medical work. Liberal provision of the means, by the community, by taxes or the voluntary contributions by humane benefactors, which funds

\*New York *Medical Record*, January 22, 1898.

are managed by boards of directors, has given us an array of luxurious buildings, well appointed inside and out in what appeals to the outer senses. But the very soul, the medical service proper, is shamefully neglected. During the past fifty years the dimensions of our hospitals have enormously increased, but the imperfect, makeshift provisions for the medical service have been retained intact to this day.

That the provisions for the medical care of our hospital patients are inadequate, I propose to show: First, by direct examination of existing methods; and second, by comparison between our ways and those of other civilized nations.

*Genesis of American Hospital.* As villages grow to towns, the need of a place where the poor man can be taken care of when overcome by sickness becomes apparent. A small building is secured by the efforts of a few enthusiastic laymen, dragging along a reluctant train of well-to-do but sluggish patrons and protectors. No difficulty is experienced in securing the medical staff. As the funds have been furnished by the town or magnanimous donors, it is only fair that the medical profession should contribute to the good work its gratuitous services. The inducements are many: Honoring distinction, flattering vanity, coveted opportunity for clinical observation and therapeutic effort. The service being gratuitous, it would be unfair to expect one set of men to bear the entire burden. Two, three, or more men are appointed to take charge of the service in alternation, reducing the work of each incumbent to a minimum, and jealousy is avoided. The hospital house staff get board and lodging, but no pay.

*Primitive Medical Service.* The growth of towns and cities has led to enlargement of existing hospitals and to the foundation of new ones, and thus while the size and scope have attained first-class importance, the providing for the medical service has remained in its primitive state.

*Co-ordinate Representation.* The governing bodies may be divided into municipal, ruled by politicians, and non-political or private corporations. Of the latter nothing can be desired as to personal integrity and business capacity. The scientific work of the institution can not be carried on without the external and business management, the only *raison d'etre* and duty of which is to provide shelter, food, order, and cleanliness.

With the growth of the scope and scientific intensity of modern hospital work, the management, both business and scientific, has become more complicated and requires special knowledge in those at the helm. Existing conditions do not guarantee this special knowledge and experience on the part of those to whom the government of our hospitals is entrusted.

*Lack of Food, Medical and Surgical Supplies.* Public charities are notorious for defective feeding and housing and inadequate provision for medical and surgical instruments and apparatuses; this in striking contrast to the proofs of high business efficiency in appearance of our private institutions.

The system now prevailing in the selection of hospital governors can not provide us with properly schooled and trained managers. "Anybody can run a hospital" is the opinion expressed by a very intelligent member of one hospital board, as he looked upon it as being very much like a hotel visited by medical men.

*Hospitals in Europe.* The care of and responsible direction of a hospital service is the highest dignity, recognized as such by all civilized nations but ours by granting to the medical men holding it both security of position and ample remuneration, with that influence in management of the service and appointment of his own assistants, ward discipline, and initiation of the necessary changes and improvements.

No novice is intrusted with such grave responsibilities—only men whose professional excellence and efficiency are recognized by the profession and laity. Professional excellence to the laymen usually implies a large or lucrative practice, but does not insure success in hospital practice. Long service as assistant, liberal, scientific, and literary training, with an independent service in a smaller hospital, are legitimate stepping-stones to such a position. The undignified scramble for vacant positions is demoralizing.

*Method of Appointment Humiliating.* Applications for such positions are humiliating to the candidate and unworthy of an enlightened body of managers.

A wise choice concurrently by the medical and lay boards, and a call extended to the object of their choice, would constitute such a preference a real honor.

Given permanent and sole charge of a large and attractive service, with an adequate salary, making the first duty to the hospital and independence from anxiety as to securing daily bread, train all assistants, give them a moderate salary, long tenure of office, and make them fit for advancement.

Under these circumstances regularity of visiting hours and operating and an orderly routine would naturally follow and secure the comfort and welfare of the patients by eliminating haste, disorder, hollow excuses for neglect of duty, create an air of promptness and secure precision in detail, with greater economy of surgical materials.

Where five or six men have the care of sixty or seventy patients, undivided attention is an impossibility, nor can justice be done when the visiting staff come when they can. This results in superficial examinations, or attention being given only to those patients which in the house surgeon's opinion are in a precarious condition. Visits are curtailed as to time and frequency, and the detailed daily and hourly treatment is entirely in the hands of an enthusiastic but inexperienced, often indiscreet, occasionally vicious and incompetent, house physician or surgeon.

*Consultant to the House Staff.* The visiting surgeon is no longer the man "in ordinary," but becomes consultant to the house staff, upon whom it has a very demoralizing effect, resulting in confusion and peril to the patients.

Hardly has A broken them in to a modicum of surgical cleanliness when B enters, and the whole structure is declared rubbish and other methods introduced. This engenders a lack of respect or honor toward their leaders, whom they openly criticize and ridicule, and throw overboard all that is important together with the rubbish. Painstaking observation and recording the inconspicuous but important features of cases are neglected for showy operations, without learning to make a decent diagnosis or knowing or caring for painstaking after-treatment. The medical histories are but a mixture of truth and pleasing fiction.

*Competitive Examinations Not a True Test.* Competitive examinations for the house staff are no test of practical fitness and bad for the welfare of the patients. Honor men who pass theoretical oral examinations with flying colors may be perfectly

worthless in service. No systematic activity on the part of the house staff is possible, while this system of periodic change and irregular attendance on the part of the visiting staff gives much scope to immature and irresponsible young men, and no excuse can be offered for perpetuating such a beggarly system in this the richest city in christendom. It is the duty of every medical man to hammer at this subject until every hospital has a well-paid and efficient medical staff.

*Well-Paid Chief.* The attending staff should be made up of men of wide experience, a chief for each department of from one hundred to one hundred and fifty beds, immovable during good behavior, paid an adequate salary, and permitted to practice in the afternoon. He must attend daily at regular hours in the morning. This would at once result in a natural systemization and regularity about a daily routine on the subordinate factors, such as are assistants, nursing, kitchen, drug-store, and every department, followed by the greatest benefit to the patient. The warden or superintendent should be a graduate in medicine of recognized executive ability. The house staff should be selected by the chief of each department from the dressers or volunteers who have served one year and proven their practical fitness; paid a moderate salary, board and lodging, and encouraged to serve for a long term.

*Timber of the Managers.* Among the governing boards of our hospitals there exists an intolerant suspicion on the part of the laymen, which shuts out expert knowledge so essential to the proper conduct of the medical work. This narrow policy affords the medical man but an apologetic advisory influence upon the work of the institution, whereas not only fairness, but the plain interests of the patients, demands expert knowledge in technical matters in the board. Ample provision is made for maintenance, reckless expenditure, magnificent buildings far in excess of necessities; no available funds are left for even the main objects, and the medical man remains unpaid. How useless to clamor for salaries from private corporations!

*Agitation for Reform.* To hope for combined action on the part of professional men is chimerical, first because entrance to professional ranks is too easy; the inrush of promiscuous elements from various trades, elements lacking even vestiges of a liberal

education, the transplantation of the mental and moral attitude of the trader into medicine is only too obvious.

We can accomplish something only by appeal to the enlightened and progressive laity. Agitation is necessary; appeals to the taxpayers will undoubtedly result in a rational organization of medical service in public hospitals, though much time and labor must be expended to secure to patients and medical men their due. With competent and zealous medical men wisely repressing the laymen toward the showy external part of charitable work, luxurious palaces half filled with patients, indifferently cared for by an antiquated and effete system of medical service, will not be erected, far in advance of the existing, huge deficits not yawn in every annual report upon the patrons and supporters of so many hospitals, and mutual concession and respect among the lay and professional laborers in this field of charity will certainly result in a better care of the patient, and, on the part of the medical men, in the consciousness of work well done because properly acknowledged and rewarded.

*Conclusions:* 1. That the present manner in which provision is made for the medical work in municipal and private hospitals is crude, inefficient, and unfair to both patient and medical man.

2. That all municipal hospitals ought to be provided with permanent medical officers, whose adequate remuneration should be defrayed by taxation; that superintendents and wardens should be medical graduates of acknowledged business capacity.

3. That by introducing a permanent and continuous service, each hospital department of about one hundred to one hundred and fifty beds should be directed by one responsible chief having safe tenure during good behavior, aided by a corps of paid assistants.

4. Private hospitals with limited means should not erect costly and vast buildings maintained with much difficulty, but should rather spend the means in providing a paid corps of permanent medical officers. Even a modest salary would insure a daily and zealous attendance on the part of the visiting men, whose number would be reduced at the ratio of one chief to one hundred to one hundred and fifty beds. In the mean time, while pay for medical work, to be provided by endowments or otherwise, is not feasible, important and valuable improvements

are possible: first, through unification, continuity, and permanency of the service; and, second, through encouragement of a long service on the part of members of the house staff by payment of moderate salaries.

5. The responsible heads of various departments should have adequate compulsory representation in the governing boards of each hospital.

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DAVIS, GWILYM G., PHILADELPHIA: THE OPERATIVE TREATMENT OF HEMORRHOIDS. (*Therapeutic Gazette*.)

The author describes a method of excision which he employs in preference to ligature or clamp and cautery in many cases, though he is partial to the ligature.

As to preparation for an operation for hemorrhoids, it is advised to administer a purge at least two successive days previously, and early in the morning of operation to give an enema of soapsuds, and another just before operating. Next stretch well the sphincters, which in itself will sometimes cure hemorrhoids. Through a speculum introduce a piece of gauze to prevent discharges from coming down, grasp the apex of the pile with a hemostat, raise it, and apply the long slender forceps. With a round sewing needle threaded with catgut, pass a stitch through and back again beneath the clamp and tie. Repeat this until the whole amount of tissue included in the clamp is ligated. It is essential that a round and not a cutting needle be used. If the skin has been included in the grasp of the clamp, an incision should be made through it with a scissos. The portion of the pile above the clamp is then cut away and the latter loosened. Any bleeding points should be ligated. The operation is completed by inserting with a curved needle and catgut as many sutures as may be desired to approximate any cut or bleeding surfaces. The sponge is removed from the rectum, an iodoform and opium suppository introduced, and a T bandage applied. To move the bowels on the fourth day with the least pain, a two-way catheter is introduced, washing away with warm saline or borax solution any accumulative feces. This procedure may be repeated for two days, when teaspoonful doses of epsom salts can be given until fluid movements occur.

## Correspondence.

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### NEW YORK LETTER.

[FROM OUR SPECIAL CORRESPONDENT.]

ADMINISTRATION OF SCHLEICH'S SOLUTION; APPENDICITIS, GENERAL PERITONITIS, SECONDARY ABSCESS, FECAL FISTULA, RESECTION, RECOVERY; X-RAY BURN NECESSITATING AMPUTATION; PECULIARITIES OF X-RAY BURNS; RUMKOFF COIL CAUSE OF BURNS; PINWORMS IN THE APPENDIX; POSTERIOR GASTRO-ENTEROSTOMY WITH MURPHY'S BUTTON; CONGENITAL STRICTURE OF PYLORUS; CALCULI IN STENO'S DUCT.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

*Administration of Schleich's Solution.* Dr. Willy Meyer, January 10, 1898, made a few remarks on the best way of administering Schleich's solution for general anesthesia, and exhibited a mask which he has especially devised for that purpose. He considers that the *essentials* for safe administration are, *first*, the anesthetist should have had careful training, and that no other be allowed to give anesthetics; *second*, the three ingredients of the solution, ether, chloroform, and benzine, must be pure, and, *third*, the solution must be applied to the cone or inhaler uniformly, drop by drop. In order to secure the latter, Dr. Meyer has modified Esmarch's mask by increasing the depth; by adding a second wire frame over the first and placing a funnel upon the second or uppermost part to hold the solution, the neck of the funnel being so arranged that by screwing it up or down increases or diminishes the outflow of the solution upon the mask. Between the two wire frames, which are hinged together, is placed a layer of flannel, and over that a layer of oil-silk; through the oil-silk, directly under the funnel outlet, a hole is made, through which the solution drops upon the flannel or upon a perforated metal disk, so placed as to insure an equal distribution of the solution.

The paper and towel cone, open at the top, will answer, but it is more difficult to control the amount of solution, its uniform administration, and the supply of air.

A very careful watch must be kept on the *respiration*; *deep breathing* indicates that less of the anesthetic is needed. Care must be taken to secure complete anesthesia before beginning the operation. In old and feeble persons, children, or those suffering from bronchitis or heart disease, solution No. 1 should be used; in healthy adults, solution No. 3.

Dr. J. P. Tuttle said that of the four or five cases in which he had used this solution, in two there had followed an unusual degree of mental excitement. Anesthesia was rapidly accomplished, and recovery therefrom unusually prompt.

Dr. Kammerer said he had had a complete collapse following its use, but he believed this to be due to the inexperience on the part of the anesthetizer. Of the thirty or forty cases in which he has used it, recovery was rapid and very satisfactory.

Dr. Lilienthal mentioned his use of this solution in six cases, one of which suffered from very severe and persistent vomiting. He asked Dr. Meyer if the construction of the face piece was such as to exclude all air, and if so, whether this is desirable? Also, is the funnel so arranged that it can not be put out of order and result in a gush of the solution which would smother the patient?

Dr. Erdman asked if any special preparation of the patient is necessary, and if morphine and atropine were given in conjunction therewith?

The Chairman, Dr. Van Arsdale, said that his experience had been somewhat limited and not very satisfactory. Two cases were asphyxiated on the table. Many vomited and coughed during and after the anesthesia, and suffered from great mental excitement afterward.

Dr. Meyer, in answering, said that he had seen but one case of undue mental excitement after using this method; in many cases excitement may be due to pain. *Vomiting* has occurred in forty-four per cent., a great reduction from that of other methods. *Collapse* is due to *overdosing* and inexperience. The quantity of *air* must be much less than with chloroform, but the opening in the mask must be over the nose, so that air is inhaled with each inspiration. In regulating the *quantity* by the funnel, as it is directly under the eye of the anesthetist, he would be able to at once see any change in its adjustment. *Morphine* is certainly of

benefit in alcoholics. The *benzine* must be of pure quality, distilled at a definite boiling point. One of Dr. Meyer's patients who had been anesthetized six times before with ether, chloroform or both, was again anesthetized by Schleich's solution, and the next day volunteered the information that this was the least disagreeable method he had experienced.

## SCHLEICH'S MIXTURES.

|        |   |                       |            |
|--------|---|-----------------------|------------|
| No. 1. | R | Chloroform.....       | 45 parts;  |
|        |   | Petroleum Ether.....  | 15 parts;  |
|        |   | Sulphuric Ether.....  | 180 parts; |
|        |   | Boiling point .....   | 38° C.     |
| No. 2. | R | Chloroform.....       | 45 parts;  |
|        |   | Petroleum Ether.....  | 15 parts;  |
|        |   | Sulphuric Ether.....  | 150 parts; |
|        |   | Boiling point .....   | 40° C.     |
| No. 3. | R | Chloroform.....       | 30 parts;  |
|        |   | Petroleum Ether ..... | 15 parts;  |
|        |   | Sulphuric Ether.....  | 80 parts;  |
|        |   | Boiling point .....   | 42° C.     |

The lower the boiling point, the more transient the anesthesia and greater its adaptability to operations of short duration.

Only petroleum ether which boils at 60° to 65° C. should be used; the ordinary benzine of commerce, which boils at 55° C., is not suitable for anesthetic purposes.

*Appendicitis.* Dr. R. P. Francis, February 14, 1898, reported the following case: W. F., boy of fourteen years, in spring of 1897 had an attack of pain in right iliac and left epigastric region. In three or four days all subsided, and he was well until October, 1897, when he suffered from nausea, pain in *left* iliac fossa, and all symptoms of a general septic peritonitis. Incision showed a ruptured appendix, very red, and pus distributed throughout the peritoneal cavity. Gauze packing was used for drainage. He did well during the next week, and wound healed in two weeks, when a swelling appeared in the umbilical region, and was diagnosed as a secondary abscess. Median incision, one pint of pus evacuated, with free discharge of fecal matter. There were several gangrenous spots on the intestine. No feces or flatus passed by rectum. Dr. McBurney advised against further operation at that time. "Keep the abscess draining." Next day a free stool *per rectum*. January 6th the sinus had con-

## CORRESPONDENCE.

tracted down to lead-pencil size. Patient vomited, bilious; relieved by enemata. January 10th re-entered hospital. Median incision, colon collapsed, small intestines distended. Cicatrix and sinus cut out by two elliptical incisions in median line. Adhesions separated, three to four inches gut excised, end to end with Murphy button. Hot saline enemata and abdominal cavity filled with the same. Operation three hours; extreme shock. Rallied after free stimulation. Four or five hours after the button put in place there occurred a free movement of the bowels *per via naturales*. The button was felt in the rectum on the eleventh day, and removed by the finger the next day. Patient left the hospital in three weeks.

Dr. Kammerer said that in some of these cases resection will fail, owing to the changes in the peritoneal coats of the intestine and dense adhesion, which seem to affect the power to firmly unite, and leakage often occurs.

Dr. Morris considers that it is not wise to spend too much time in separating adhesions, but that it is better to resect above and below, and unite the ends which are free and healthy.

*X-Ray "Burn" Necessitating Amputation Above the Knee.*  
Dr. J. P. Tuttle exhibited a rather unique section of a knee-joint which he had amputated owing to chronic ulceration following the use of the X-ray. The knee had been crushed during the war, and had given pain ever since. Four years ago a floating cartilage was removed, and gave some relief for three years. Three months ago an X-ray was taken, and it was not until three weeks after that any manifestation of trouble was noted, when the whole joint area sloughed out, granulated but did not heal. Skin-grafting was tried and apparently was successful for four or five weeks, but the fifth week sloughed away, leaving an area six and a half by five and a half of raw surface. This was accompanied by extreme pain. Constant irrigation gave relief for two or three days, when pain returned and slough reappeared. General condition very poor. February 7th, amputation well above granulating area. Good recovery. The joint shows about a dozen pieces of fractured bone united by fibrous bands.

*Peculiarities of X-Ray Burns.* Dr. Bronson spoke of the interesting features in connection with these injuries following

the X-ray, in that it is not a burn, but a process which begins from *within* and extends outward to involve the skin. Further the late appearance, one or two weeks, beginning as a slight blush, then in erythematous patches, becoming confluent, and lastly sloughing away, not a wet nor a dry gangrene, but in a tough "chamois like" layer.

Dr. Vissman said that he had not yet given the specimen a careful examination, but he had found a well-marked arteritis and thickening of the periosteum.

Dr. Gibney, who had seen the case in consultation, considered any treatment other than amputation would have been useless. He had seen an X-ray burn which at the end of eighteen months had not healed.

*"Rumkoff" Coil the Cause of "Burns."* Dr. Tuttle called attention to the reports which have demonstrated that the "burns" have only occurred when the "Rumkoff" coil has been used, and none where this has been replaced by *static* electricity. A thin sheet of aluminum is said to prevent these burns. Few recover under nine months. Fowler cut away all the sloughing area, and it healed in five weeks. In Apostoli's case the area healed and broke down again, and was not well at end of eighteen months. It has been noted that applications, such as are used to allay pain in an ordinary burn, increase the intensity of the pain in these cases, and in all cases nothing but liberal doses of morphine will render life bearable.

*Pinworms in the Appendix; Localized Tubercular Peritonitis.* Dr. Woolsey reported a case of appendicitis, fourth attack (interim), where at the tip of an otherwise healthy organ a bunch of pinworms were lodged. He also put on record a case in which an area two and a half by three inches in the neighborhood of the appendix showed miliary tubercles. The interior of the appendix was normal. The case presented all the symptoms incident to an ordinary attack of appendicitis. It is of interest to note that the mother of this patient died of consumption.

#### SURGICAL SOCIETY.

*Posterior Gastro-Enterostomy with Murphy's Button.* Dr. Meyer, February 23, 1898, presented a man, fifty years old, upon whom he had operated, December 12, 1897, for benign stricture

of the pylorus. For six years he had had stomach trouble, and had been treated for enlargement of that organ. He came under Dr. Meyer's care June, 1897, and lost thirty pounds in the following six months. In December, previous to operation, the stomach was found markedly enlarged, pylorus could not be felt, but peristaltic movements were visible through the abdominal wall. This is looked upon as the most distinctive symptom. Hydrochloric acid abundant, lactic acid absent. Slight adhesions in the region of the pylorus were separated and the meso-colon split. The stomach was then drawn out of the cavity and attached by Murphy's button to the jejunum. In spite of the thickened stomach wall this was readily accomplished. Pulse very bad at close of operation, and saline infusion was practiced while the patient was still upon the table.

As the results have been so favorable (twenty-three cases without a death), Dr. Meyer considers Murphy's button the best device for these cases. Suture to the posterior wall is very difficult; the button easy, rapid, and in five cases, where the patient's condition has been very low, has been successfully accomplished under cocaine anesthesia. Saline infusions, while the patient is on the operating-table, will at once improve the quality of the pulse and heart's action. This may be repeated, if necessary, two or three times in twenty-four hours.

*Congenital Stricture of Pylorus in a Baby Six Weeks Old.* Dr. Meyer also related a case in which he had performed posterior gastro-enterostomy on a child six weeks old, weighing but seven pounds, for congenital stricture of pylorus. The jejunum was contracted so that its lumen would hardly permit the introduction of the smallest Murphy button. The operation was quickly done. After a short time the baby vomited all nourishment, and continued to do so until death. *Post-mortem* examination showed that death was due to obstruction caused by the button. Dr. Meyer has had a smaller size button made to meet such cases.

*Calculi in Steno's Duct.* Dr. Frank Markoe exhibited two calculi, one of which had been removed by his father from Steno's duct in 1891, and the second was removed by himself from the same patient in 1892, when it was found necessary to slit up the duct in order to extract the stone. The patient has been well ever since.

A. ERNEST GALLANT, M. D.

# MATHEWS' QUARTERLY JOURNAL

—OF—

## RECTAL AND GASTRO-INTESTINAL DISEASES.

*"Alis Volat Propriis."*

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Vol. V.

LOUISVILLE, APRIL, 1898.

No. 2.

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JOSEPH M. MATHEWS, M. D., EDITOR.

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Articles and letters for publication, books and articles for review, communications to the editors, and advertisements and subscriptions, should be addressed to

Editors *Mathews' Quarterly Journal*, Box 434, Louisville, Ky.

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## SURGICAL AND OTHER HOSPITAL SERVICE.

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The article quoted from in this number, by Dr. Arpad G. Gerster, contains references to questions which are of the greatest importance to the profession to-day. The writer gives much deserved praise to the work done by the medical man, and recognizes the importance of the hospital service in making these accomplishments possible. But the present management of hospitals is deplored, the universal lack of recognition in this country of the medical experts in the hospital governing boards. It is pointed out that a superficial view of the subject will show the "orderly, smooth, quiet running, complicated but well-oiled machinery," but it is the medical work, which is "the very soul of the hospital," which is in a shamefully rudimentary state. In following the first hospital in a primitive community from its foundation, it is shown that the medical profession must render gratuitous services as their part of the contribution toward its maintenance if not its foundation. The management of the hospital, however, is placed in a governing board, generally appointed as a political reward instead of selected for fitness and worth. In consequence there is defective feeding and housing, inadequate provisions for medical and surgical instruments and apparatus. The present manner of appointing visiting men is improper and humiliating to medical men, there being most

undignified scramble for vacant hospital positions. "Permanency of service and the obligation entailed by financial remuneration create a responsibility and strictness of official obligation entirely different from what can be fairly and reasonably expected when services are gratuitous." This applies to the training of assistants as well, who should be attracted by "moderate pay and longer tenure of office."

As the staff is at present constituted, the bulk of the work is done by an inexperienced though enthusiastic house staff. The irregular visits of the attending men, the confusion of ideas caused in the house staff by frequent changes of their medical superiors, and the operating mania tend to cripple the efficiency of all hospitals.

"If only the welfare of the patient is to be considered, the present cheap and wretched method of providing hospital assistants ought directly to be abolished." They are appointed as the result of a theoretical examination of questionable value, and without experience are entrusted with the care of the patients. As soon as they become experienced and of value they are removed by limitation of service. These are all live, burning issues, and this article should attract the attention of every one interested in hospital management and hospital work.

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#### THE LOUISVILLE JOURNAL OF SURGERY AND MEDICINE.

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The next issue of this journal will appear as a *monthly*. It was the intention of the editor from the beginning of its publication to change it from a quarterly to a monthly just so soon as it had proven its ability to live as a dignified and clean journal. Many friends have urged for a long time that the change be made, but not until now has the editor seen his way to make it. The subscription and advertising lists have all the time been very satisfactory, but with the first appearance of the journal as a monthly we are sure that both the subscriber and the advertiser will be more than pleased.

At the last meeting of the Louisville Surgical Society this journal was made its organ, and its proceedings each month will be published in this journal *exclusively*. The Surgical Society has gained a national if not an international reputation for the able, scientific papers and discussions that characterize its meetings. The name of the journal will be changed in order to indicate its scope, and will hereafter be known as THE LOUISVILLE JOURNAL OF SURGERY AND MEDICINE. Every department both in surgery and medicine will be represented. The two departments which have made the QUARTERLY so popular will be continued, viz., rectal and gastro-intestinal diseases. All the specialties will have wide scope given them, but special consideration will be given to general surgery and medicine.

While thanking all those who aided in making the QUARTERLY such a pronounced success, we bespeak their aid in making the monthly the same. No personalities shall ever appear on its pages, but the whole and sole aim of the editor shall be to make it a pure and up-to-date journal.

J. M. MATHEWS, *Editor.*

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### THE DENVER SPECIAL.

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Ever since Denver was chosen as the next place of meeting of the American Medical Association, the profession of that city and of the State have been untiring in their preparations for the entertainment of their guests; with them it is a great, live, burning issue.

They assure their visitors a good time, according them the hospitality of the metropolitan city of the foothills in the true western sense of the word. It is the modest desire of Denver to eclipse in point of numbers the Philadelphia meeting, and it is planning to entertain a larger number than that of a year ago, and to give that number a cordial welcome, a good meeting, and a good time.

The Denver Special has been planned with the greatest care and consideration of the minutest detail which will contribute

to the comfort of its passengers. It will be handsomely equipped with sleepers and dining-car, and will proceed from St. Louis west by special schedule. The Special will be made up at this point by special parties from all points, the Greater New York Special, the Philadelphia and Pennsylvania Special, the Kentucky Special, the Dixie Special, the Indiana Special, etc., each party bringing from one to two car loads each.

A short stop will be made at Kansas City, where the Special will take aboard the members of the Association of Military Surgeons and a number of the local profession.

The train will be personally conducted and the comfort of the passengers looked after by railroad officials. Baggage cars will run with the train, so passengers may get at their baggage en route, when desired, without inconvenience.

The rate is the all-absorbing question, but has not been yet officially announced. It is generally conceded by all that the rate will be one fare for the round trip, certainly west of the Mississippi, and more than likely from all other points. On that basis from St. Louis the rate will be \$24.50 for round trip. Sleeping-car reservations should be made early by writing Dr. Henry E. Tuley, 111 West Kentucky Street, Louisville.

The schedule will be as follows: Leave St. Louis Saturday, June 4th, at 10:30 P. M.; arrive in Kansas City Sunday morning, June 5th, and arrive in Denver Monday morning, June 6th.

A beautiful itinerary of the trip is now in the course of preparation, and will be mailed on application to Dr. Tuley.

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#### THE ALLEGHENY COUNTY MEDICAL SOCIETY.

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The editor was honored by an invitation to address The Allegheny County Medical Society, at Pittsburgh, Pa., on the evening of January 25th. The occasion was a very delightful one, and will long be remembered. The members were very kind in giving the privilege of seeing the many notable places in their great city. We are especially under obligations to the Faculty

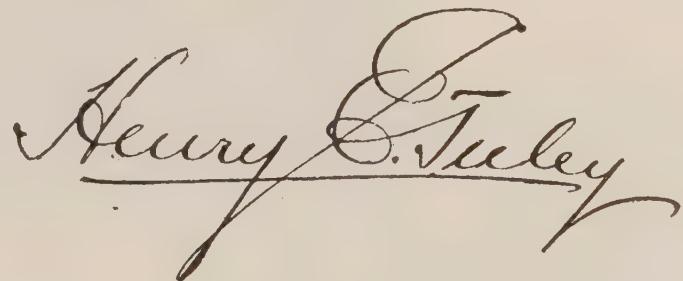
of The Pennsylvania Hospital and School for the privilege of inspecting these two most worthy institutions, and for the courteous compliment of being invited to lecture and hold a surgical clinic before the large class assembled. We are especially indebted to those two distinguished and affable members of the local profession, Drs. Foster and Daly, for many courtesies, and indeed to all that we had the pleasure of meeting. Long live The Allegheny County Medical Society.

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WITH this issue the connection of the undersigned with the QUARTERLY ceases.

He takes this occasion to express his appreciation of the many courtesies received at the hands of his co-laborers in the editorial field, the many contributors to the journal, and the advertisers.

The attention of exchanges is called to this with the request that the address of the QUARTERLY be changed from Box 434 to 923 Fourth Avenue, Louisville, Kentucky.

A handwritten signature in cursive script, reading "Henry S. Tuley", is centered on the page below the text. The signature is written in black ink on a light-colored background.

## Obituary.

### DR. W. S. O'NEAL.

Dr. W. S. O'Neal died on March 15, 1898, at his home in Lancaster, Ky., after a brief illness, from broncho-pneumonia. He had been a sufferer for years from bronchial asthma, and his death was a great shock to his many friends. Dr. O'Neal was born in Verona, Boone County, October 3d, sixty-one years ago. He graduated in medicine from the Ohio Medical College in



1861, and at once began the practice of his profession at Verona, where he continued to reside until thirteen years ago, when he moved to Lancaster, where he has since resided. In 1861 he was married to Miss Mattie Yancey, of Grant County, three children being the result of the union. His widow and one daughter survive him.

He was a member of the Kentucky State Medical Society for more than thirty years, was a consistent member of the Baptist Church, and a leading figure in the management of the local church.

A few weeks prior to his death he was appointed a member of the State Board of Health, which position he resigned when he realized his illness was of such a serious nature.

Presection stitches.

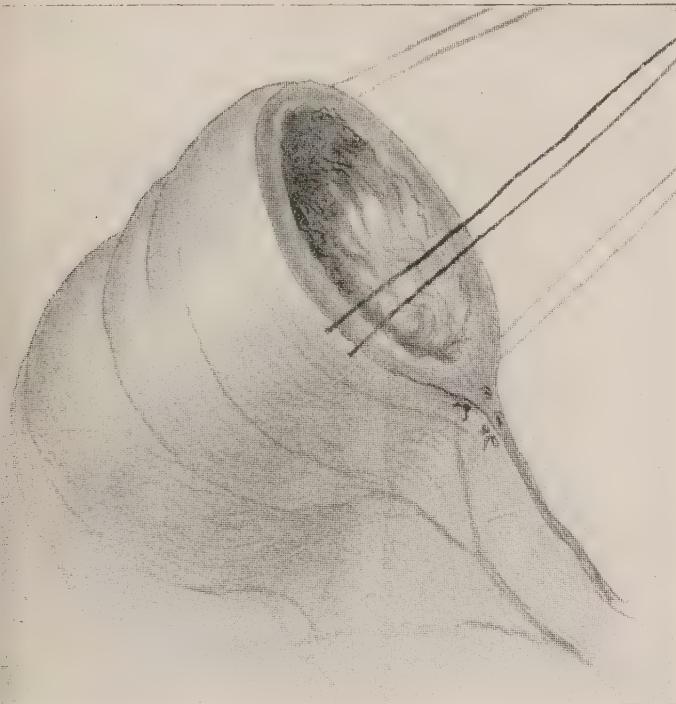


FIG. 2.

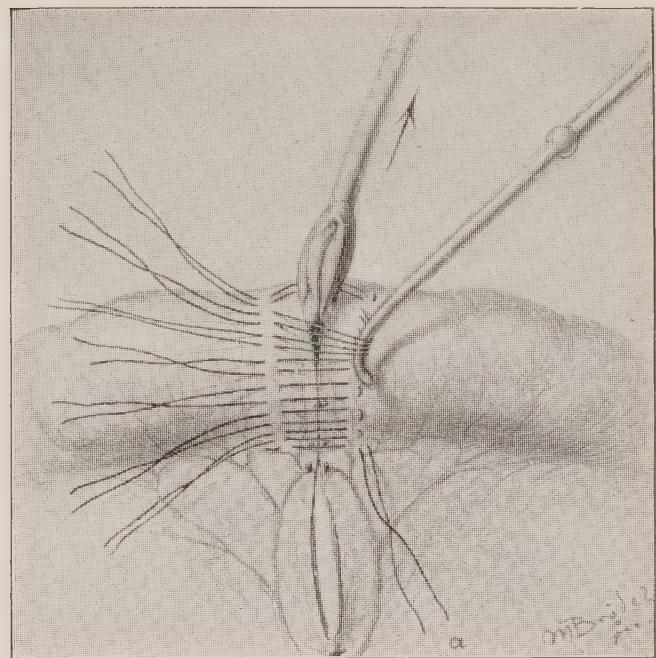


FIG. 8.

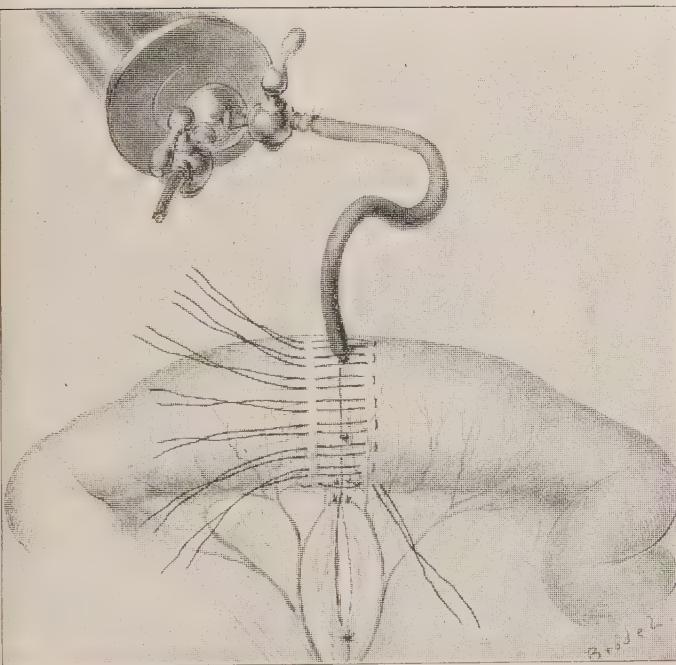


FIG. 7.

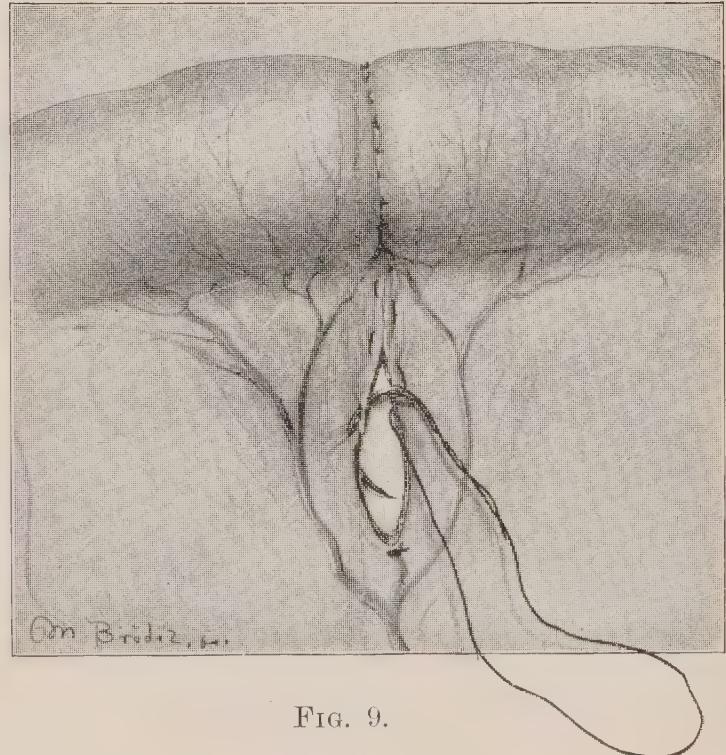


FIG. 9.

Presection stitches—Right.

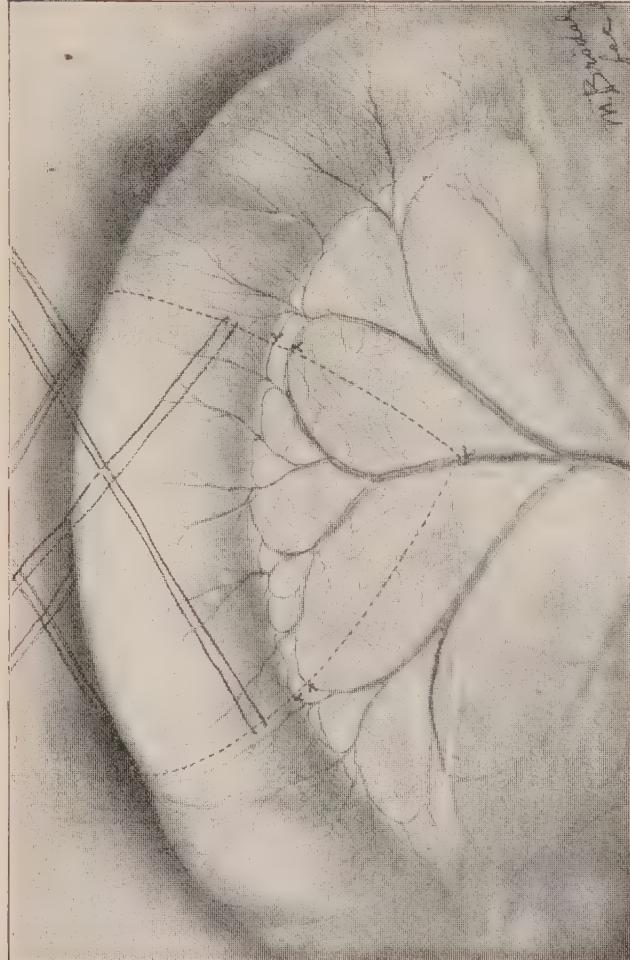


FIG. 1.

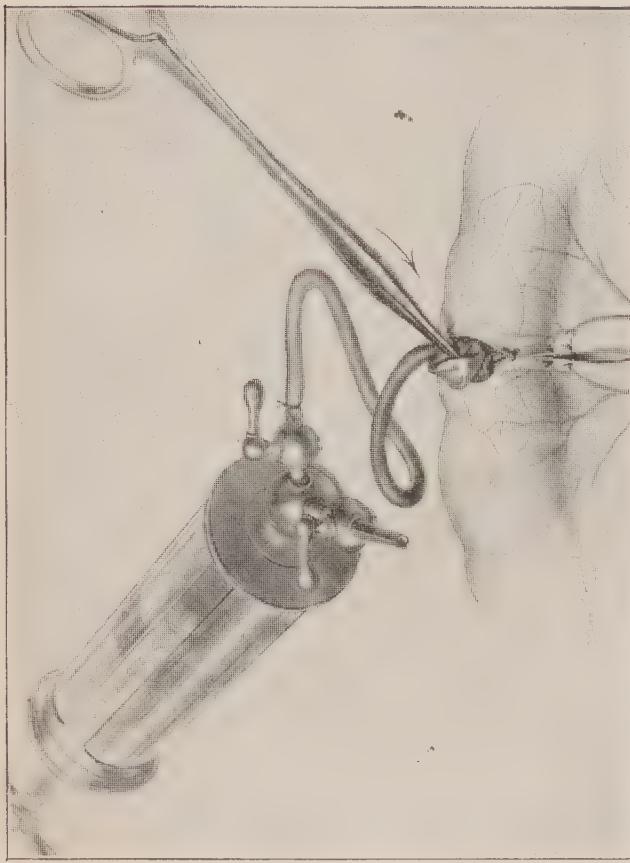
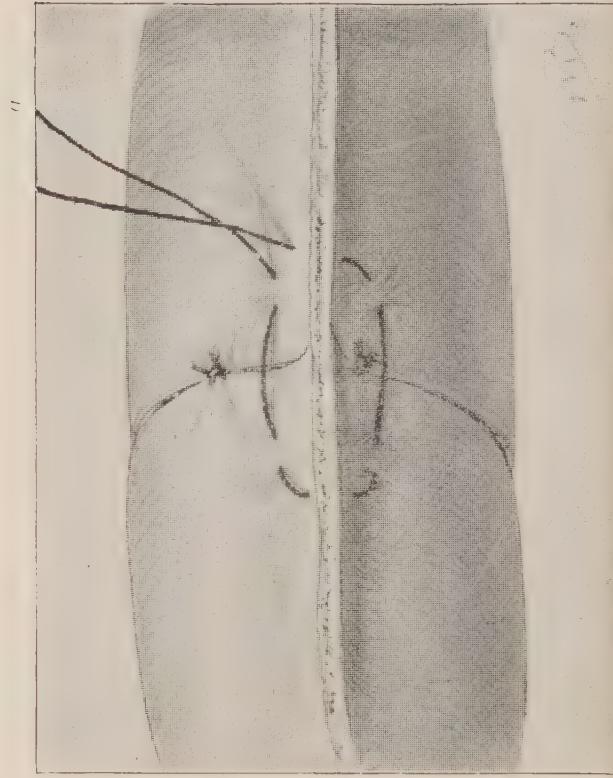
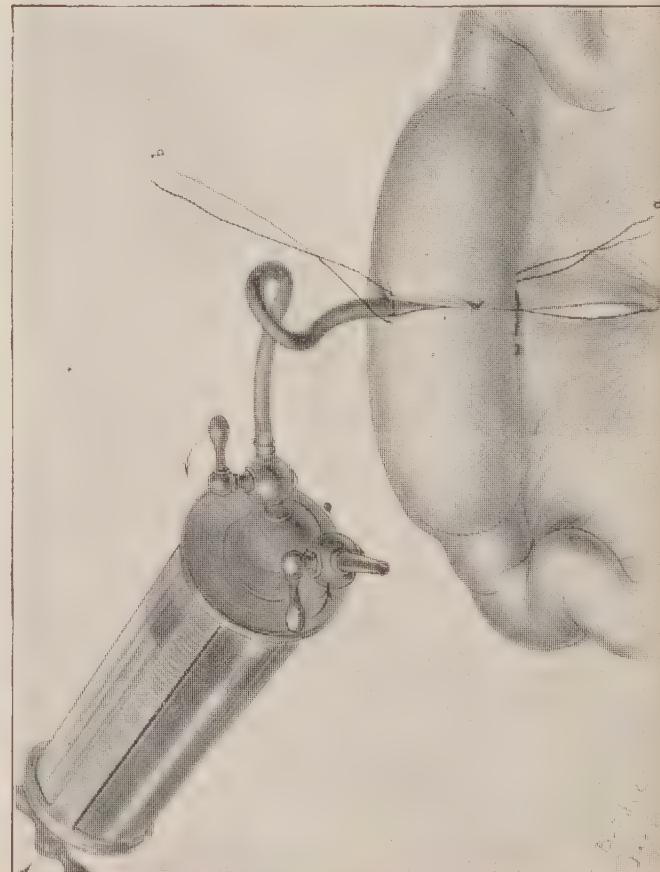


FIG. 4.



## With Our Exchanges.

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### GASTRO-INTESTINAL DISEASE.

HALSTED, W. S., BALTIMORE: INFLATED RUBBER CYLINDERS FOR CIRCULAR SUTURE OF THE INTESTINE. (*Johns Hopkins Hospital Bulletin.*)

Figs. 1 and 2 show the presection-stitches applied. It is immaterial whether these stitches perforate the wall of the intestine or not, for they are cast off eventually into the bowel. The method of ligating the mesenteric vessels is also accurately shown in Figs. 1 and 2, which were drawn from life. The intestine should be divided carefully with scissors as close to the presection-stitches as possible. No visible blood-vessels are occluded by these stitches.

Fig. 3. The rubber cylinder inflated. For the human small intestine the diameter of the cylinder is from  $1\frac{1}{4}$  to  $1\frac{1}{2}$  inches. It would be better to have cylinders larger than necessary rather than too small.

In Fig. 4 two of the presection-stitches have been tied, and the collapsed rubber cylinder is being pushed into the bowel with a forceps.

Fig. 5. The three presection-stitches have been tied. They are supplemented by a fourth stitch, *b*, which is removed later to facilitate the withdrawal of the bag. The bag has been inflated with air by the syringe. Water might, of course, be used instead of air; but a bag distended with air would perhaps more quickly reveal a prick from a faulty stitch than a bag distended with water.

The stitch *a* (Fig. 6 and also Figs. 5, 7, and 8) is the first and most important of the mattress or permanent stitches. The submucosa is picked up four times by this as by all the mattress stitches, and the mesentery is twice perforated by it (Fig. 6). This stitch insures the proper turning in of the mesenteric border.

Fig. 7. The bag is still distended, and all of the mattress stitches have been placed. From seven to nine of these stitches suffice in operations upon the small intestine of the dog, and from

ten to twelve in operations upon the human subject. The first stitch to be drawn home and tied is *a*. The mesenteric border is turned in by it infallibly. *Not a single visible vessel is occluded by the stitches* (Figs. 7 and 8). On the right side the stitches pass under one vessel and over another, without interfering with either, and on the left side a vessel lies under the stitches, uninjured.

Fig. 8. Two mattress stitches drawn aside on a hook; the temporary stitch has been removed and the collapsed bag is being withdrawn.

Fig. 9. The circular suture is completed; the slit in the mesentery is being sewed in such a way that its circulation is not interfered with.

Advantages of the inflated rubber cylinder in circular suture of the intestine:

1. The vermicular action of the bowel is arrested over the bag, and the stitches can, consequently, be placed at regular and proper intervals.
2. The distended bag unrolls and spreads out to a fine edge the everted raw edge of the intestine (Fig. 4), and enables the operator to place the stitches with great precision at the desired distance from this edge.
3. If distended intestine is to be sutured to collapsed intestine (in strangulated hernia, ileus, etc.), or intestine of larger to intestine of smaller lumen (jejunum to ileum, duodenum to esophageal end of the stomach, etc.), the smaller may easily be expanded to fit the larger piece.
4. Very little handling of the intestine itself by the operator is necessary. The tube from bag to syringe is used as a handle to rotate and elevate the parts to be united.
5. The cylinder takes the place of at least two assistants. The operation could readily be performed without an assistant.
6. It prevents escape of intestinal contents, and hence dispenses with the injurious clamps or the fingers of assistants.
7. The entire operation, exclusive of suture of the abdominal wall, can be performed on dogs in five or six minutes, and probably in less time.

The results should, I believe, be better than by any method hitherto devised.

KELYNACK, T. N., MANCHESTER, ENG.: ON MECKEL'S DIVERTICULUM. (*British Medical Journal.*)

Meckel's diverticulum forms the remnant of the omphalo-mesenteric duct. Some time ago the anatomical Society of Great Britain and Ireland published the results of a collective investigation as to the occurrence of this diverticulum ilei. As a supplement to this list the writer publishes an analysis of the cases which have been met with recently in the pathological department of the Manchester Royal Infirmary.

*Number and Proportion of Cases.* Among 1,446 subjects examined, 18 examples of Meckel's diverticulum have been met with. This gives a proportion of 1 in 80, or not quite 1 per cent.

*Sex.* This embryonic vestige seems to occur more frequently in the male. In our cases the proportion was 11 males to 7 females.

*Age.* This is merely of interest in so far as it shows that this fetal remnant does not greatly predispose to serious intestinal derangements. The average age of the 18 cases was 38 years, that of the males being 36 and that of the females 38 years. The eldest male was 60, the youngest 14; the oldest female 62, the youngest 13 years.

*Cause of Death.* In no instance was the presence of the Meckel's diverticulum in any way connected with the cause of death. In one case at least it was so placed as to have readily allowed of the occurrence of an internal hernia.

*Position.* The distance of the diverticulum above the ileocecal valve averaged  $34\frac{1}{2}$  inches; the greatest was  $50\frac{1}{2}$ , the smallest 15 inches.

*Length.* The average length of our 18 specimens was nearly  $2\frac{1}{4}$  inches; the longest  $6\frac{1}{2}$  inches, the shortest half an inch.

*Size.* This varied considerably. The diameter in 12 averaged an inch and a half. One of the largest specimens was discovered in a male subject, aged 42, dying from acute pneumonia. The diverticulum was connected with the ileum by a narrow mouth three-quarters of an inch wide, and then extending to a diameter of an inch, rapidly widened into a large pouch almost as big as the cecum. It had a diameter of  $3\frac{1}{4}$  inches, and a circumference of  $10\frac{1}{2}$  inches. It lay quite free in the abdomen. Possibly its large size may have been due to distension by the intestinal contents.

*Connection with Intestine.* In all the cases the diverticulum freely communicated with the intestine. In only a few instances was the mouth distinctly smaller than the lumen of what might be called the body of the diverticulum. Occasionally the origin from the gut proved to be distinctly funnel-shaped. No valve was present in any case.

*Relation to Mesentery.* The diverticulum always arose on the far side from the mesentery, although not always immediately opposite to it. In one instance it was adherent to an adjoining fold of mesentery. Generally the diverticulum came off at right angles to the gut, but in some subjects it was placed a little obliquely to the intestinal canal.

*Contents.* In no instance did the diverticulum contain any foreign body. Often there was nothing but air, but in some a little fecal matter was present.

*Special Characters.* Two specimens had a cord-like structure coming off from their termination. In one the cord was fixed to the abdominal wall, forming a loop. One had a bifid extremity. Several had bulbous or club-shaped terminations, with secondary lateral dilatations. Many were mere nipple-shaped projections.

In no instance was the lumen of the diverticulum continued to the umbilicus or abdominal wall.

BUCHMAN, A. P., FORT WAYNE, IND.: THE THERAPEUTIC VALUE OF ARSENAURO. (*New England Medical Monthly*.)

To fully appreciate the therapeutic value of a drug one must understand its limitations. No remedy can be made to do more than a limited number of things. To ascertain just what pathologic conditions are modified or changed for the better by a given therapeutic agent is a task of no mean importance, yet an absolute necessity when we aim to be rational in our methods.

For the past four years Arsenauro has been one of the chief factors in my therapeutic armamentarium because of its almost universal happy effects in the special line of work that I have, almost exclusively, engaged in. The body of work has been in the field of denutrition and false metabolism, depending remotely upon gastric and intestinal indigestion.

It is not my purpose at this time to classify and enumerate an extensive list of such patients, but rather to give a very short

clinical history of a type case in which the phenomena that reached the threshold of consciousness were sufficiently distinct to induce the opinion that a diverse etiology, rather than a single line of cleavage, was necessary in order to reach a logical demonstration of the causative factors in operation, and therefore rationally outline a therapeutic course destined to terminate in satisfactory results.

Abnormal metabolism and denutrition express themselves in direct relation with constitutional idiosyncrasies, hygienic environments, and the vulnerability of the organism. Bearing this in mind, we can comprehend why one patient will present a pathology of the lungs, another a kidney affection, and still another a disease of the nervous system, while the point of departure from the health line in all is the same.

The first case in which I noticed gratifying results following the exhibition of Arsenauro was that of a traveling insurance adjuster who had suffered with gastric indigestion over a period of five years, in consequence of which his blood stream was impoverished, his nervous system shattered, and the whole organism working at the lowest possible pressure. The particular symptom that brought him to me was insomnia. He was forced to quit work on this account. A further description of this case is unnecessary, as the clinical picture is familiar to every one. A thorough cleansing and disinfection of the digestive tube was the first step, after which I carefully regulated the diet so as to insure the greatest quantity of nutrition for the least amount of energy expended by the digestive forces. Bathing, massage, and electricity were ordered. The usual carminative and tonic drugs were exhibited. This course was persisted in for a month, during which there was noticeable betterment, but not sufficient to satisfy either the patient or myself. I now withdrew all the former drugs and gave him Arsenauro in ten-drop doses four times daily. In ten days the patient was sleeping comfortably, eating and digesting fairly well, and altogether was sufficiently recovered to go to work moderately. After sixty days' constant use of the drug he announced himself as having entirely recovered and able to perform the exacting work required of him with ease and pleasure. The recital of this case will suffice to illustrate the groove into which Arsenauro fits so perfectly. It changes the chemical

movement in the blood plasma. The movement of the atoms thus initiated continues; new material takes a more pronounced part in the various phenomena of motion and life; the lymphatic glands, whose office it is to supply fresh material to the blood and nervous system, are changed to healthy action, their products become normally reconstructive; cell digestion is stimulated, and the blood is improved up to a normal standard.

To accomplish these results, however, it is not enough to simply give Arsenauro. I have tried to expose the preparatory work which is absolutely essential, and without which Arsenauro, like any other drug given out of time and place, will yield only negative or indifferent results.

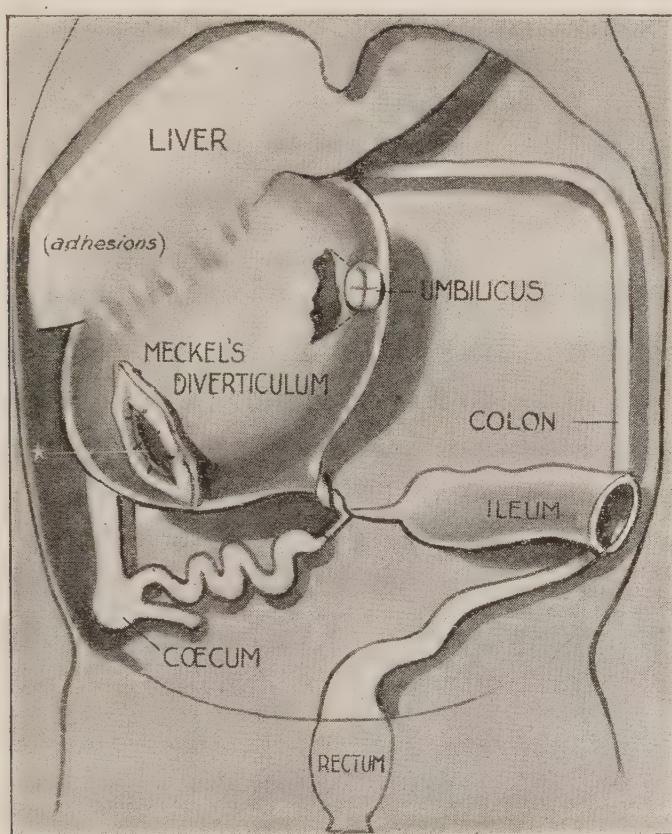
I have never secured from Fowler's solution the fully desired arsenic results which have invariably followed the administration of Arsenauro, and yet, as Dr. Stucky over a year ago pointed out in his scientific paper, the average dose of Arsenauro contains very much less actual metallic arsenic than does Fowler's solution. We evidently have an entirely new agent in Arsenauro, something more than the mere combining of arsenic and gold, for by evaporating Arsenauro you have a resultant crystal which is not the crystal of arsenic, nor is it the crystal of gold, but a crystal such as I have never seen before. I would lay emphasis upon the point that I have observed no evidence of arsenical poisoning from Arsenauro. It does not produce cumulative effects, but is easily and promptly assimilated.

CARWARDINE, THOS.: VOLVULUS OF MECKEL'S DIVERTICULUM. (*British Medical Journal.*)

L. P., aged two days, was brought to the Bristol Royal Infirmary on October 15, 1897, on account of intestinal obstruction. The child had been repeatedly sick, bringing up a greenish-brown vomit, and had passed nothing *per anum*, nor discharge from umbilicus. The belly was much distended, and exploration of the rectum with the finger revealed no cause. The child was watched and treated for six hours, but nothing passed.

*Operation.* The distension appeared more on the left side, and accordingly celiotomy was performed in the left semilunar line. Here the small intestine presented, very much distended, with lymph upon its surface from peritonitis. The colon, when

brought to the surface, was very small, not larger than a crow quill, whitish, empty, and non-sacculated. With the finger in the abdomen I could feel bimanually a mass to the right of the umbilicus. A second incision was therefore made in the right semilunar line, when much distended gut presented, which it was impossible to bring out of the opening, owing to numerous adhesions; and for the same reason the source of obstruction could not be felt, although it seemed almost certain that it was due to an anomaly of Meckel's diverticulum. On making an



\* Enterostomy aperture, with skin attached.

artificial anus, a considerable quantity, several ounces, of meconium escaped. The cecum and ascending colon were small, white, and empty. The symptoms persisted, and the child died twenty-four hours later. At the *post-mortem* examination it was found that a meconium-containing cyst had been opened, produced by a volvulus of Meckel's diverticulum of some three turns, as in the figure. Only a fine impervious cord connected it with the bowel below it, and a minute stalk, which would partially admit a bristle, attached it to the distended bowel above, the junction being a T-shaped one.

The points of interest to which attention should be drawn are:

1. The *ante-partum* commencement of peritonitis, as shown by the lymph and adhesions of firm character to parts around.
2. The occurrence of the volvulus of Meckel's diverticulum *in utero*, during late fetal life, so that a meconium-containing cyst was segmented off from the meconium-containing ileum, and therefore obstruction was not relieved by opening the distended diverticulum.
3. The lower twelve inches of small intestine were empty and tortuous, and the colon small and non-sacculated. No meconium had ever passed into them, yet the cecum and appendix were well formed. This disposes of a common view as to the development of the cecum.

BYERS, J. WELLINGTON, CHARLOTTE, N. C.: INFANTILE CONSTIPATION. (*Journal of the American Medical Association.*)

There are some reasons of an anatomic and physiologic character why we would naturally expect to find constipation in infants of frequent occurrence. The muscular structure of the infant bowel is feeble and thin, and possesses but little capacity to propel the feces onward when they have once assumed consistency and bulk. The descending colon of the child is also longer than other parts of this bowel, and readily permits of dilatation and sagging when there are accumulations within. From these physical and anatomic causes, together with the fact that the intestinal juices in general are very much lessened in children, we can easily perceive how constipation may be common in this class of subjects.

Constipation is almost exclusively associated with a purely milk diet, nurslings being the most commonly affected, receiving an overplus of milk. Next in point of occurrence come the infants fed upon sterilized or boiled milk, and least of all babies fed on raw cow's milk, or a mixed diet of starch and milk. The author believes that there is a real connection between the milk diet and the constipation, but, contrary to the accepted belief ascribing it to casein, he believes it due to an excess of fat. Clinical experiences in other conditions of the digestive tract will aid us here. It has been shown repeatedly that the very first step in the decline of the digestive functions of the child

was an increase in the amount of the fat in the stools; that the primary stage in dyspeptic infants is failure to use fat.

It was Wegscheider who pointed out several years ago, and Holt has incorporated the statement in his work, that the little yellowish masses passed in the stools of dyspeptic infants were not casein, as commonly thought, but fat. In the constipation with which I am now dealing there is an impairment of the agencies concerned either in the digestion or assimilation of fat, or both. The fat appears as the chief constituent of the stool because of its rejection or failure to be appropriated. It produces constipation by its mechanical effects and the muscular impairment dependent on the contingencies of general malnutrition due to fat deprivation.

A large part of the so-called infant foods, or food attenuants, have been brought before the profession because of the supposed capacities to antagonize and modify what has been considered as casein. We should ever keep in mind the great fact that the real test of any food is not its digestibility, however important this may be, but the ability of the patient to assimilate and use it.

CUTLER, ELBRIDGE, BOSTON: GASTRIC DYSPEPSIA. (*Boston Medical and Surgical Journal*, Vol. cxxxvii, No. 11.)

Among the causes of gastric dyspepsia the author mentioned the following: Faulty preparation of food in mouth by imperfect mastication and insalivation; too frequent ingestion of food; the choice of food, the composition of it, and the size of a meal; ingestion of too much or too cold fluids during meals; too free use of carbonated table waters; habitual drinking of alcoholic liquors before, with, or after meals; the misuse of spices; too much exercise or head work after eating.

Emphasis was laid upon the importance of a thorough general as well as local examination of these cases. The important symptoms mentioned are, in acute dyspepsia, primarily an indigestion following a meal which does not set well, manifesting itself as an unpleasant feeling or sense of discomfort, pressure, or fulness in epigastric region; increasing discomfort, distension of stomach, nausea and increased flow of saliva. Vomiting may entirely relieve the patient if the stomach can entirely be relieved of its contents.

In chronic dyspepsia the gastric symptoms are less prominent; associated are intestinal disorders; loss of weight and strength; disturbed appetite; chronic pharyngeal catarrh; fulness, weight in region of stomach; palpitation, belching, and eructations; pyrosis; diarrhea or constipation may be present.

The heartburn, the author states, may be produced by an increased secretion of hydrochloric acid, hyperacidity of the hydrochloric acid of the gastric juice, or increased formation of organic acids in the stomach. The latter are due to an abnormal fermentation during gastric digestion. The burning caused by hydrochloric acid is more severe when due to hydrochloric acid in excess than when due to organic acid, but that due to organic acid is more frequent, appearing some time after a meal.

For the overabundant secretion of gastric juice a tumbler of cold water should be given on an empty stomach early in the morning; careful restriction of the diet to milk, eggs, white meat, easily digested cereals, vegetables, and fruit should be insisted on. It is advised not to administer sodium bicarbonate, as it is changed in the stomach to chloride of sodium, an excitant to secretion of gastric juice. In severe cases stomach-washing before breakfast is important.

The treatment of increase in production of organic acids is that of chronic gastric catarrh and gastric atony.

Pains in the stomach and cramps come only from hinderance of the movements of the gastric contents, except when dependent on great structural defects, and opiates should seldom be used.

PFAFF, FRANZ, BOSTON: TREATMENT OF CONSTIPATION.  
(*Boston Medical and Surgical Journal*, September 9, 1897.)

That treatment which will remove the cause of constipation is the best. The causes are varied: retro-flexed uterus, intestinal stricture, anemia, pulmonary congestion, may be mentioned among the number.

Agents which may be beneficial are mentioned as follows: hygienic measures; regular habits, outdoor exercise, gymnastics, hydrotherapy, massage, and electricity.

Diet and medicinal agents will relieve many others. The first should always be tried first and persisted in. Increase in the daily meals fresh vegetables, fresh fruits, and various grains;

coarse breads, graham or rye, and more water. The direction of the diet treatment is by no means easy—each case being one to itself. Food the carbohydrates of which will be transformed into  $\text{CO}_2$  and fatty acids cause the contents of the small intestine to remain more fluid; and the presence of the different salts and gums, mucilages, pectins and other colloids contained in vegetable material are most curative. Blueberries, chocolate, tea, and coca should be avoided, owing to the constipating effect of the tannic acid.

Medicinal agents have often to be employed to promote peristalsis, and these agents may be divided into the organic compounds and the inorganic salts.

The chloride of sodium and sulphate of sodium groups constitute the inorganic salts; to the former group belong all neutral salts which are easily absorbed in the small intestine from their watery solutions, they promoting absorption of foodstuffs and increasing peristalsis of the small intestine. They are entirely absorbed in the small intestine and excreted in the urine.

To the other group, sulphate of sodium salts, belong those which are difficult of absorption, such as sulphate and other salts of magnesium, the phosphates and tartrates. These are expelled with the feces and not with the urine—they prevent the absorption of water.

Increase of peristalsis is caused by the use of the organic salts, as rhubarb, senna, cascara sagrada, aloes, gutta, elaterium, colocynth, jalap, and croton oil.

Dr. Pfaff states that if dried ox bile be given in suitable form and sufficient quantity, fifteen to thirty grains three times a day, constipation may be relieved in very obstinate cases. He advises giving it in salol coated pills to prevent absorption from the stomach in large quantities, before meals, after which the bowels may become entirely normal. Bile acts mainly on the contents of the small intestines, and the indications for its use are limited.

It must not be overlooked that treatment directed to the large intestine is often at fault when the condition would be relieved by a modification of the contents of the small intestine. Atropine, phystogmine are mentioned as indicated under certain conditions.

## Book Reviews.

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**The Psychology of Suggestion: A Research into the Subconscious Nature of Man and Society.** By BORIS SIDIS, M. A., Ph. D., Associate in Psychology at the Pathological Institute of the New York State Hospitals. With an Introduction by PROF. WILLIAM JAMES, of Harvard University. New York: D. Appleton & Co. 1898.

This work by Dr. Sidis shows great application and thorough work on the part of the author, and is a valuable contribution to the subject. No better description of the work, or criticism, can be made than that furnished by Prof. William James in his Introductory, and we quote from that as follows:

"The meaning of personality, with its limits and its laws, offers a problem which, until quite recently, had to be discussed almost exclusively by logical and metaphysical methods. Within the past dozen years, however, an immense amount of new empirical material had been injected into the question by the observations which the 'recognition' by science of the hypnotic state set in motion. Many of these observations are pathological, fixed ideas, hysterical attacks, insane delusions, etc.; and altogether, although they are far from having solved the problem of personality, they must be admitted to have transformed its outward shape. What are the limits of consciousness of the human being? Is 'self-consciousness' only a part of the whole consciousness? Are there many selves dissociated from one another? What is the medium of synthesis in the group of associated ideas? How can a certain system of ideas be cut off and forgotten? Is personality a product and not a principle?

"Such are the questions now being forced to the front, questions now asked for the first time with some sense of their concrete import, and questions which it will require a great amount of further work, both of observation and analysis, to answer adequately. Meanwhile many writers are seeking to fill the gap, and several books have been published seeking to popularize the new observations and ideas and present them in connected form. Dr. Sidis' work distinguished itself from some of these by its originality, and from others by the width of its scope.

"It is divided into three parts—'Suggestibility,' 'The Self,' 'Man as one of a Crowd.' Under all of these heads the author

is original. He tries by ingenious experiments to show that the suggestibility of waking persons follows an opposite law to that of hypnotic subjects. . . . In No. 2, on 'The Self,' a very full account is given of 'double personality,' 'subliminal consciousness,' etc. The author is led to adopt as a plan of the dissociations which lie at the root of all these conditions the psychological theory of retraction of the transmission of the brain cells, which in other quarters also seems coming to the front. He makes an elaborate classification of the different degrees of dissociation or amnesia, and, on the basis of a highly interesting and pathological case, suggests definite methods of diagnosis and cure. This portion of the book well deserves the attention of the neurologist.

"In No. 3 the very important matter of 'crowding psychology' is discussed, almost for the first time in English; there is probably no more important topic to the student of public affairs. Dr. Sidis illustrates it by fresh examples, and his treatment is highly suggestive."

This opinion by so eminent an authority as Prof. James expresses admirably the scope of the work, and his opinion is thoroughly concurred in by the reviewer. The book is thoroughly up-to-date in every respect, and especially is this the case in his application of the neuron theory to the various psychological states.

**Hugh Wynne, Free Quaker.** Some time Brevet Lieutenant-Colonel on the Staff of His Excellency General Washington. By S. WEIR MITCHELL, M. D., LL. D. (Harvard and Edinburgh), Philadelphia, Pa. New York: Century Company. 1897.

A notable contribution to American historical fiction has been made in "Hugh Wynne, Free Quaker," and it should gratify the members of the medical profession that its author is of their fraternity. The demure Quaker garb of the volumes gives but little indication of the charm of their contents. Primarily it is a novel of character, a fact to which some of its critics have been singularly oblivious in citing occasional historical inaccuracies. These minor lapses detract nothing from the book, which is peculiarly happy in the reality of its representation of the atmosphere of the period. The characters of Washington and André are drawn with masterly insight. The great leader is not divested of the noble attributes which history and tradition ascribe to him, but particular stress is laid upon those trials and

ordeals which betrayed the true nature of the *man*—his conflicting emotions of pity and sympathy against his stern consciousness of justice and duty. André's tragic death throws a new light upon his part in our American Revolution, and we are more ready to revere him as a noble and courageous soldier than, in excess of patriotism, to stigmatize him with the name of "spy."

The character of Hugh Wynne develops naturally under the narrow limitations of thought and action imposed by the Quaker doctrine; and it is interesting to note the influence exerted upon the boy by the austerity and bigotry of his unsympathetic father, and by the tender devotion and quaint graces of his little French mother, who was "but half a Quaker" despite her somber dress, and who completely wins the reader. The rivalry for the hand of the capricious but lovable Darthea unfolds a love story of genuine interest, which affords a clear insight into the unusual but thoroughly attractive character of Aunt Gainor, behind whose prejudice and masculinity of thought and deed is disclosed a wealth of genuine kindliness and womanly feeling.

To the physician this work of Dr. Mitchell's will possess peculiar interest in the realistic portrayal of the decline of John Wynne's mental powers, "whose arteries were older than the rest of him;" while the student of history will be engrossed with the powerful descriptions of the war. But above all are the excellence of the character sketching and the broad and deep understanding of human nature which pervades the entire volume.

**A Text-Book of the Diseases of Women.** By HENRY J. GARRIGUES, A. M., M. D., Professor of Obstetrics and Gynecology in the New York School of Clinical Medicine, etc. Containing three hundred and thirty-five engravings and colored plates. Second edition, thoroughly revised. Price, \$4, cloth; \$5, one half morocco. Philadelphia: W. B. Saunders. 1897.

This, the second edition of Dr. Garrigues' book, is a decided improvement upon the first edition, issued in 1894. This is due not only to the fact that he has brought it up to the standard reached in gynecological work since 1894, but in many details the present edition is far superior. Illustrations which in the first were crude and decidedly antiquated have been replaced in this by modern ones. Still, however, there are some in this which could have been as well left out.

There is a great deal to commend in this work, but in many places subjects which merit, in fact which demand, more atten-

tion are dismissed in a few words or perhaps a page or so. For instance, under the caption "Disinfection, Asepsis, and Antisepsis," only a trifle over one page is used, and to the preparation of the hands of the operator and his assistants only twelve lines are devoted, a most—one might almost say *the* most—important step in the operation. We do not agree with the author in the importance placed in using antiseptics for this purpose. Those who use antiseptics most freely are those who are deficient in their aseptic technique, and generally know it.

The subject of anesthetics is disposed of in about four pages, and it has rarely been our pleasure to see the subject more succinctly put in so short a space. The author speaks well of the A. C. E. mixture, but prefers ether for general use.

It is a pleasure to note in referring to the "inflated rubber cushion," on page 194, the author does so by this name, and does not call it this or that man's pad.

We think that the chapter on intestinal surgery had best have been left out, rather than have dismissed it with so incomplete a description as is given in the appendix.

The book is attractively gotten up, and the publishers certainly deserve great credit for this.

**The Elements of Clinical Diagnosis.** By PROFESSOR DR. G. KLEMPERER, Professor of Medicine at the University of Berlin. First American from the seventh German edition, with sixty-one illustrations. Authorized translation by Nathan E. Brill, A. M., M. D., Adjunct Physician Mount Sinai Hospital, New York, and Samuel M. Brickner, A. M., M. D., Assistant Gynecologist Mount Sinai Hospital, New York. The Macmillan Company. 1898.

Professor Klemperer's work has reached the seventh edition in German, but this is the first opportunity we have had of seeing its translation. The translators have done their work admirably, and the English-speaking profession of America is to be congratulated on the publication of this work. We have never seen a little book which is so complete in every respect as the one before us. Necessarily some subjects have to be treated in an incomplete manner, but even that does not detract from the value of the book in the least.

It is to be regretted that the publishers have insisted upon the use of the diphthongs so generally, as *æ*, *œ*, etc., which most medical publications and writers have long since dropped.

The introduction into the text of sample temperature charts is decidedly to be commended, as, in our opinion, it is difficult to obtain so accurate an idea of the progress of a case as by the temperature chart. In the typhoid fever section no mention is made of the serum diagnosis, though the diazo reaction is referred to quite fully.

Ankle clonus is referred to as "foot" clonus. The chapter on "Diagnosis of Diseases of the Stomach" is unusually complete and placed in an attractive manner with a splendid resumé of the various chemical analyses of the contents of the stomach. The rest of the chapter upon the diseases of the digestive system is fully as complete.

It is rather to be regretted that diseases of the respiratory organs is dismissed with so short a description, but as a resumé it will serve its purpose splendidly. The same may be said of the description of the valvular lesions of the heart. The chapter on the Roentgen Rays can not be considered at all complete; in fact, we think so brief a description is worse than none at all.

As the publishers state, the German school leads in clinical diagnosis, and it must indeed be a pleasure to sit in the classes of so distinguished a teacher as Professor Klemperer, as it is a pleasure to read his most excellent work.

**Applied Physiology for Advanced Grades.** Including the Effects of Alcohol and Narcotics. By FRANK OVERTON, A. M., M. D., Late House Surgeon to the City Hospital, New York. Cloth. 12mo, four hundred and thirty-two pages. With Illustrations and Diagrams. Price, 80 cents. American Book Company, New York, Cincinnati, and Chicago.

This book has been prepared to meet the requirement of teachers and schools for a modern text-book of Applied Physiology, which should embody the latest results of study and research in biological and chemical science, and the best pedagogical methods in science teaching. It represents a new and radical departure from the old-time methods pursued in teaching physiology. It begins with the study of the cells of the body as the units in which life exists and acts, and with this as the basis of treatment, shows their relation to all the elements of the human body and all the processes of human action. This is the keynote of the treatment throughout the book, and is the first attempt to apply, in a consistent and scientific manner, the prin-

ciples and facts of biology to the study and teaching of physiology in schools.

Other distinctive and valuable features of the book are the arrangement of summaries and review topics at the end of each chapter; the list of subjects for original demonstrations and the use of the microscope in connection with the study; the special treatment of hygienic subjects, as air, ventilation, drinking-water, sewage, clothing, bathing, bacteria, repair of injuries, etc. The effects of alcohol and narcotics are treated in a judicious and scientific manner, not in a separate chapter, but in connection with the several topics and subjects treated in the book. The book is not only modern and scientific in treatment, but it is written in such a clear and direct style as to make every subject interesting and comprehensible. The topical arrangement and clear typography of the pages will render the use of the book convenient and satisfactory.

**The American Microscopical Society.** Transactions of the Twentieth Annual Meeting held at Toledo, August 5, 6, and 7, 1897. Edited by the Secretary, Wm. C. KRAUSS, M. D., F. R. M. S., Buffalo, N. Y.

**Transactions of the Medical Society of the State of North Carolina.** Forty-fourth Annual Meeting, held at Morehead, N. C., June 8, 9, and 10, 1897. Secretary, RICHARD H. LEWIS, M. D., Raleigh, N. C.

**Transactions of the Texas State Medical Association.** Twenty-ninth Annual Session, held at Paris, Texas, April 27, 28, 29, and 30, 1897. DR. H. A. WEST, Galveston, Tex., Secretary.

**Transactions of the British Orthopedic Society.** Volume II; Session 1896. E. LUKE FREER, M. R. C. S., Eng., Secretary, Birmingham, Eng.

These volumes are valuable because of the complete record of papers read at the different meetings and their discussions. The volumes are all bound in paper, and present evidences of careful preparation on the part of the various publication committees.

A feature which will be appreciated by most societies is the introduction into the volume, by the Microscopical Society, of a number of pages of advertising matter, from which the handsome sum of one hundred and forty-four dollars was realized. This helped very materially in the payment for the publication of the transactions. The difficulty which most societies have in issuing these annual volumes is the collection of sufficient money to pay for the publication, as is evidenced by the Secretary's report of the Texas State Medical Association, in which he reviews the various methods which may be adopted to accomplish this end,

said society being in need of funds for this purpose. The British Society has adopted this same method, and has four pages of advertising matter.

**The American Year-Book of Medicine and Surgery.** Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, etc. Collected and arranged with critical editorial comments by a corps of editors under the general editorial charge of **GEORGE M. GOULD, M. D.** Illustrated: Cloth, \$6.50; half morocco, \$7.50. For sale by subscription. Philadelphia: W. B. Saunders. 1898.

The editor announces in his preface that a number of changes have occurred in the editorial staff, among which is the resignation of Professor Leffman. Three departments have been created of the special field edited by him, Physiologic Chemistry, edited by Prof. John J. Abel, of Johns Hopkins Hospital; Public Hygiene and Preventive Medicine, by Dr. Samuel W. Abbott, Secretary of the Massachusetts State Board of Health; and Legal Medicine, by Dr. Wyatt Johnson, of Montreal, Canada. The general summary of the year's work is written by Drs. William Pepper and Alfred Stengel. In this due credit is given Widal for introducing a most useful and practical diagnostic test of typhoid fever. A most delightful resumé of the work done in gastro-intestinal surgery is given in some forty pages, of which appendicitis claims its full share. The articles on hernia, by Lothrop, Morton, Paget, Malloy, Ransohoff, De Garmo, Stinson, Kocher, Coley, are reviewed fully, and bring the question thoroughly up to date. It is greatly to be regretted that the editor in charge of the literature on Diseases and Surgery of the Rectum should have credited Dr. Jos. Bacon's article on Stricture of the Rectum to the *Quarterly Medical Journal* instead of to this journal. This is a mistake which of course can not be rectified.

**Sexual Neurasthenia. Its Hygiene, Causes, Symptoms, and Treatment, with a chapter on Diet for the Nervous.** By **GEORGE M. BEARD, A. M., M. D.**, New York, with notes and additions by **A. D. ROCKWELL, A. M., M. D.**, New York. Fifth edition, with formulas. New York: E. B. Treat & Co. 1898.

This is a very interesting and instructive book. It deals with a class of troubles than which none are so poorly understood and so many mistakes made in their treatment.

Neurasthenia, a term which has become by universal use to express many and varied conditions, the author narrows down

to mean "nervous exhaustion," and refers to "sexual neurasthenia," "cerebral," "spinal," "digestive," "traumatic," "hemi-neurasthenia," and "hysterical neurasthenia." Neurasthenia he defines as "a chronic, functional disease of the nervous system, the basis of which is impoverishment of nervous force; deficiency of reserve, with liability to quick exhaustion, and a necessity for frequent supplies of force; hence the lack of inhibitory or controlling powers, physical and mental, the feebleness and instability of nerve action, and the excessive sensitiveness and irritability, local and general, and the vast variety of symptoms, direct and reflex."

Medical men as a rule lay too little stress upon the symptoms presented by the sexual neurasthenics, and think of them too much in general terms. Their advice is, therefore, incomplete and the patient not benefited. This book, with its chapter of illustrative cases with their prominent symptomatology, will prove instructive in many ways.

**Diseases of the Stomach.** Their Special Pathology, Diagnosis, and Treatment, with sections on Anatomy, Physiology, Analysis of the Stomach Contents, etc. In three parts. By JOHN C. HEMMETER, M. B., M. D., Philos. D., Clinical Professor of Medicine in the Baltimore Medical College; Consultant to the Maryland General Hospital, etc. With many original illustrations. Philadelphia: P. Blakiston, Son & Co. 1897. Price, \$6.00.

It is a great pleasure to be able to say that the latest aspirant for honors in this special field, the book before us, an American book, is the best that we have seen. This is a well-deserved compliment, for there are a number of most excellent works on the stomach and its diseases. That this should have been produced in this country by one of our own is a cause for pride; a demonstration that we, as a profession, are equal in clinical work and clinical results to any other nation.

The book, as announced on the title-page, is divided into three parts: Anatomy and Physiology of the Digestive Organs; Methods and Technics of Diagnosis; Part II, Therapy and Materia-Medica of Stomach Diseases; Part III, The Gastric Clinic.

Part I is admirable and the illustrations excellent, especially the colored plates showing the structure of the stomach.

Space does not permit a detailed review of this work; it is, however, a most excellent book in every respect.

**A Clinical Text-Book of Surgical Diagnosis and Treatment:** For Practitioners and Students of Surgery and Medicine. By J. W. MACDONALD, M. D., Graduate in Medicine of the University of Edinburgh; Licentiate of the Royal College of Surgeons, Edinburgh; Professor of the Practice of Surgery and of Clinical Surgery in Hamline University, Minneapolis, etc. With 328 illustrations. Philadelphia: W. B. Saunders, Publisher. Price, cloth, \$5.00; half morocco, \$6.00 net.

A great surgeon once said: "If a physician is correct in his diagnosis, he is very apt to be treating the case properly." This book will be of wonderful service to the surgeon in the way of making a proper diagnosis of all surgical affections—and of giving the proper treatment. Many of the text-books are singularly deficient in the first, devoting most of the space to the latter. Every department is covered by the author, and well covered, and his book is up to date in every particular—even specialists in the different departments of surgery will be benefited by a perusal of this book, as such subjects are fully and fairly considered. To the student the work is invaluable. The publishers deserve credit for the admirable manner in which the book is issued.

**Orthopedic Surgery.** By JAMES E. MOORE, Professor of Orthopedia and Clinical Surgery in College of Medicine of the University of Minnesota, etc. With one hundred and seventy-seven illustrations. Philadelphia: W. B. Saunders. 1898.

This book of three hundred and fifty pages, concise, finely printed, and well illustrated, on a subject little understood by physicians generally, appears at a very opportune time. As a text-book, and one for ready reference by the practitioner, it could hardly be improved upon. The author gives evidence of a large experience in this special department, as well as general surgery. He does not confine the orthopedist to "straps and buckles," but expects him to do whatever operation is required to best fulfill the indications. The book is strictly "up to date," and only words of praise can be accorded it by the reviewer.

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**The Care and Feeding of Children.** A Catechism for the Use of Mothers and Children's Nurses. By L. EMMETT HOLT, M. D., Professor of Diseases of Children in the New York Polyclinic, etc. Second edition, revised and enlarged. New York: D. Appleton & Co. 1898.

In 1894 it was our pleasure to call the attention of our readers to this little book by Dr. Holt. It is gratifying that the

first edition has been so well received as to demand a second edition in so short a time. The same features of the first edition have been preserved in this, in that it is a series of questions and answers arranged in such a manner as to be of the greatest service to mothers and nurses.

To those who are familiar with Dr. Holt's writings it is unnecessary to comment upon the excellent style which he has displayed in this little book, but those who are not familiar with his writings we can but refer to a review of his most excellent work entitled "Diseases of Infancy and Childhood," in a recent issue of the QUARTERLY.

To the former edition Dr. Holt has added several features which make this one more valuable, such as a description of the various methods of the modification of cows' milk, with formulas, making it very easy for home modification, with but little trouble on the part of the physician in further instructing them. It is indeed a valuable book, and we predict for it a rapid sale.

**Manual of Pathology.** Including Bacteriology, the Technic of Post-Mortems, and Methods of Pathologic Research. By W. M. TATE COPLIN, M. D., Professor of Bacteriology and Pathology, Jefferson Medical College, etc. With two hundred and sixty-eight illustrations. Philadelphia: P. Blakiston, Son & Co. 1897. Price, \$3.00.

This excellent book has overstepped the limits of a *Manual*, having assumed in the second addition six hundred and thirty-eight pages and two hundred and sixty-eight illustrations. It includes chapters on technic, general and special pathology. The illustrations are numerous, and almost without exception most excellent. The plan pursued of placing at the conclusion of each chapter a list of questions is an excellent one, and will be of great assistance to the student in reviewing the subject.

**Second Annual Report of Board of Managers of Second Hospital for the Insane of the State of Maryland.** DR. GEORGE H. ROHE, Superintendent. 1897.

This report of the superintendent of this hospital is interesting, especially on account of the description given in it of the new buildings which have been in course of construction under the supervision of this eminent authority for some time. It is a model of its kind, and will no doubt be copied extensively in the future when similar buildings are in prospect of erection.

## Notes.

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*To the Health Officials, Physicians, and People of Kentucky:*

Smallpox is now widespread in Eastern Tennessee, North Carolina, Southwestern Virginia, and Northern Alabama, and several cases exist in Middlesborough and near Jellico, in this State. The epidemic appears to have originated in Mobile last summer, and to have been gradually extending northward since. It is chiefly prevalent among the negro population, and manifests an unusual tendency everywhere to break over official control and assume an epidemic form.

This Board, therefore, feels that it is its duty to warn the people that prompt action may prevent its further spread in this State. Fortunately prevention is as certain and safe as it is cheap and easy. Vaccination and revaccination properly done with reliable virus is a certain preventive, and is entirely free from danger. This is the conclusion of the health officers of the world after years of patient investigations, and is now an accepted truth in preventive medicine.

Notwithstanding these facts, about one third of the people of Kentucky have never availed themselves of this protection. Our people should not wait for orders from boards of health in the presence of an epidemic to force them to an evident duty. Every citizen should see to it that not only himself but everyone for whom he is responsible is vaccinated at once. No child should be admitted to any public or private school who has not been vaccinated, and all factories, railroads, and mines should make the same requirement. This is especially important in view of the threatened danger.

The operation should be done by a competent physician, under proper aseptic precautions, and he should see the person vaccinated from time to time so the result may be certain. Imperfect vaccination gives a false and often fatal sense of security. Reliable virus can be obtained from the National

Vaccine Farm, Washington, D. C., or their agents, the Henry Pharmacal Company, Louisville, Ky.

In addition it is urgently requested that all boards of health perfect their organization at once, if they have not done so, and take every precaution to prevent the entrance of the disease into their jurisdictions, or, failing in this, be ready to stamp it out by strictly isolating the first case, and vaccinating and revaccinating every person exposed to it. All funerals should be strictly private.

This Board holds itself ready to give any assistance in its power at any time.

By order of the Board.

J. M. MATHEWS, M. D., *President.*

J. N. McCORMACK, M. D., *Secretary.*

**COOKING FOR THE SICK.**—Mrs. S. T. Rorer lays down these rules for "Cooking for the Sick and Convalescent," in the March *Ladies' Home Journal*: "In cooking for the sick a moderate heat is necessary to bring out and intensify, rather than destroy or keep within, the delicate flavorings of the materials used. Where receipts call for butter it must be added to hot dishes after they have been taken from the fire. All fried things must be avoided.

"Gruels or semi-starchy foods require long, slow cooking. Meats must be cooked, but not overdone. Under no circumstances should raw meats, raw beef juice, or raw beef tea be used. Pasteurization is necessary to remove the danger of disease germs.

"Serve hot foods hot; cold foods cold. This does not mean the extreme of either.

"In arranging the tray keep every thing as dainty as possible, using white or very pale colors. A simple vase of flowers, with not too decided an odor, will prove an added attraction. Roses, violets, lilies-of-the-valley or bouvardias are advisable for their daintiness and absence of heavy odor."

ON Saturday, the 15th of January, a Training School for Nurses was opened at the Loomis Sanitarium, Liberty, N. Y. The class was opened with thirteen members; Miss Helen Kim-

ber, a graduate of the Bellevue Training School, is the superintendent. The opening lecture was given by Dr. H. P. Loomis, Professor of Materia Medica of the University of New York.

While these nurses will receive the regular training, such as is given in other schools, special attention will be paid to instruction in the care of cases of tuberculosis. This departure in the way of training is a new departure, and is believed to be justified by the ever-increasing demand for nurses for this class of patients.

It is believed that these nurses can be constantly and advantageously employed at health resorts and as traveling companions for young people in incipient stages of the disease. The course will be of two years' duration.

ONE of the features of the visit to the Rockies on account of the American Medical Association meeting will be an excursion from Denver to Salt Lake City and return via the D. & R. G., Colorado Midland, and Rio Grande Western railways, through the "heart of the Rockies," furnishing a splendid opportunity to view the most magnificent scenery on the American continent. Salt Lake City is an ideal summer resort, and the bathing at Saltair, in the Great Salt Lake—inland salt sea, nearly a mile above sea level—is superb in June. There are more attractions in and about Salt Lake City than any place in the world. Send to F. A. Wadleigh, G. P. A. Rio Grande Western Railway, Salt Lake City, for copy of pamphlet on Salt Lake City and the Rocky Mountains.

DR. WILLIAM B. MEANY, late of St. Louis, has returned to Louisville, his native city, to practice his profession. Dr. Meany has for many years made diseases of the eye, ear, nose, and throat a specialty, and has contributed many interesting and learned articles, on these special subjects, to medical literature. The profession will be glad to welcome Dr. Meany back home.



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## Special Notices.

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"NOTE ON DIASTATIC PREPARATIONS."—An abstract in the March, 1898, number of the *Albany Medical Annals*, by Dr. Willis G. Tucker, Professor of Chemistry, Albany Medical College:

Having recently completed a series of tests of some of the medicinal preparations of malt and cod liver oil, which are now so largely prescribed as digestive aids in certain forms of faulty digestion, with consequent imperfect food assimilation, no less than for their direct value as nutrients, it has seemed to me that the results obtained were of sufficient interest to warrant their publication, with a brief statement of the method employed in determining the diastatic value of the articles examined. The samples tested were purchased by myself at drug stores in New York City, Troy, and Albany early in January of the present year.

Three preparations of the class referred to, which appear to be largely prescribed by physicians, were selected, and one sample of each, in an unbroken, full-sized package, was purchased in each of the localities named. For the purpose of record these were numbered 1, 2, and 3. . . .

The inquiry was restricted to a careful determination of the diastatic activity of the preparations, since this is likely to vary, and upon this activity the remedial value of such articles largely depends. The method employed in making this determination was one which I had previously employed in similar work, and which has been found to yield very satisfactory and concordant comparative results. . . .

Precisely the same method was employed in each determination, and the conditions were in all respects identical in all the tests.

The results may most readily be understood if stated in parts by weight of maltose, or its equivalent, in reducing sugars, produced by one part of each of the preparations examined, and these were found to be as follows in the three tests which were made of each article:

No. 1 = 4.42, 4.98, 4.24, the average being 4.54.

No. 2 = 1.66, 1.41, 1.32, average being 1.46.

No. 3 = 0.52, 0.51, 0.54, average being 0.52.

It is, I think, fair to state that the first of these preparations was Maltzyme with Cod Liver Oil, and that these results plainly indicate its diastatic activity. Such preparations as this have aptly been styled "digestive foods," and the value, as previously stated, in large measure depends upon the amounts of active diastase which they contain. For this enzyme, possessing the property of bringing the starch in food into a soluble condition and converting it into easily assimilable forms of dextrin and sugar, is a valuable aid to digestion in certain cases, and if its activity is unimpaired it is capable of exercising an important influence upon the digestive process when properly administered.

THE SALICYLATES, AND THE BEST MEANS OF ADMINISTERING THEM.—It would be a work of supererogation to undertake, at this late day, to prove the great and permanent value of the salicylates in the treatment of rheumatism in its various forms. For over twenty-five years salicylic acid and the salicylates have been recognized as standing at the very head of remedies in this class of diseases.

There are, however, very many and grave drawbacks to the use of either the acid or any of its salts alone in a treatment which may last, as in rheumatism, gout, and neuralgia, for a long period of time. Being a powerful antifermennt and sharing this property with most of its salts, salicylic acid impairs digestion and soon sets up a dyspeptic condition, almost as intolerable as the pains which is intended to overcome. Its after-taste can be covered and concealed in no matter yet discovered, so that very soon the patient takes it only with great difficulty.

In Tongaline the salicylates are so combined with corrigents that there is no reactionary rebellion against them by the organs of digestion and assimilation, while their efficacy is not affected in the least. The experience of thousands of physicians corroborates this statement and concurs in the fact that Tongaline affords the very best method of administering the salicylates.

**NEURECTOMY FOR TIC-DOULOUREUX.**—Bernays' "Report of a Surgical Clinic," complimentary to the members of the Mississippi Valley Medical Association, contains the following, in reference to his patient's condition and treatment before neurectomy for tic-douloureux was decided upon:

"Case 5. The patient, aged fifty, white, female. Family history: Has one sister who suffered from emotional insanity; otherwise the family history is good. Previous health excellent. The present trouble began with a severe neuralgic toothache, localized in the right lower molars. Paroxysms of pain were of daily occurrence, and most severe in the mornings about breakfast time. The pain subsided temporarily whenever the teeth were pressed firmly together or upon any substance held between them, but only to return when the pressure was withdrawn. The presence of any thing cold in the mouth immediately produced the most exquisite pain; moderate heat produced a soothing effect. After two months the pain became continuous, and four molars were extracted without in any way relieving it. On the contrary, the pain increased in severity until October, when it ceased entirely for a period of two weeks, and then returned as severely as before. Another tooth was sacrificed, but without relief; the pain became continuous until last June, when it again subsided for a period of six weeks. A recurrence then took place, together with an involvement of the parts supplied by the second branch of the fifth nerve. Pain had been constant until the operation. She had strenuously avoided the use of narcotics, but during the more active periods of pain Antikamnia, in ten-grain doses, was found to be an efficacious obtunder." After describing the neurectomy Prof. Bernays says: "Eight weeks have now elapsed since the operation, and no recurrence of the trouble has taken place."

**A PERFECT CO-ADJUVANT.**—Physicians should not forget that no matter what their preference may be as to the form in which milk should be used for their patients and the babies under their care, whether it is modified, sterilized, pasteurized, peptonized, treated by some other method, or natural, they can always depend on the perfect co-adjuvancy of that unrivaled dietetic preparation, Imperial Granum; many years of successful clinical experience having proved this combination of nutriments to be acceptable to the palate and also to the most delicate stomach at all periods of life, being in many cases retained and assimilated when every thing else is rejected, though in very extreme cases the Imperial Granum is often prepared with pure water only.

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*Professor of Surgery and Clinical Lecturer on Diseases of the Rectum  
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"One of the most prominent features of this work is originality. This is true not in the sense that the work contains only a record of the original research of the author, but that it expresses everywhere the author's peculiar views of the subject under consideration, and his individual opinions of the views, methods of treatment, operations, etc., of other writers. . . . The views of the author are well worthy of perusal, both on account of the lucid manner in which they are expressed and on account of the many years of extended practical experience upon which they are based. The mechanical execution of the work may be expressed in one word—perfect."—*Ohio Medical Journal*.

"This handsome volume of nearly five hundred and fifty pages is the largest work upon the subject in any language. While the views and operations of many surgeons are considered and discussed, the author has approved only such methods as experience has shown both practical and successful. Though he is authoritative, he is not dogmatic; and though his sentences imply confidence in his methods, they are neither oracular nor apologetic."—*Texas Courier-Record of Medicine*.

"This work is not a compilation; it is true the author quotes freely from others, but he always gives credit and does not plagiarize. There is evidence of strong original work, and any physician who is not posted in rectal matters can safely put down his cash for this book, and, after fully mastering the teaching, make an examination of the rectum with a degree of confidence, if not with pleasure."—*Ontario Medical Journal*.

"The work, as a whole, is one of the best that has ever appeared on the subject, and any one who expects to treat rectal diseases, either as a general practitioner or specialist, should have a copy of this work."—*Toledo Medical and Surgical Reporter*.

"For over fifteen years Professor Mathews has given his special attention to diseases of the rectum. During these years he says he has learned that many things are taught that are not true, and that many things are true that are not taught. Therefore he swings clear of all obstructions, and records his own experience. As would be expected from one of such independent thought, there is much that is wholly new in the book."—*National Medical Review*.

"In conclusion, it is a satisfaction to say that Professor Mathews is to be congratulated on the production of his work, for on the whole it is a valuable, safe, and practical guide to follow, well worthy the careful perusal of any surgeon, young or old, who is at all interested in the particular branch of surgery to which it is devoted. . . . The author is to be congratulated also upon the efforts he has made, and is making, to wrest the treatment of rectal diseases from the domain of quackery, which has long tried to monopolize it, and to place it in its legitimate sphere among the well-recognized specialties of surgery."—*Buffalo Medical and Surgical Journal*.

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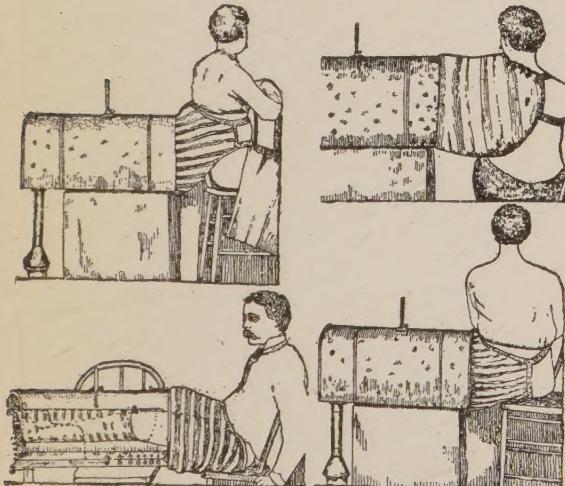
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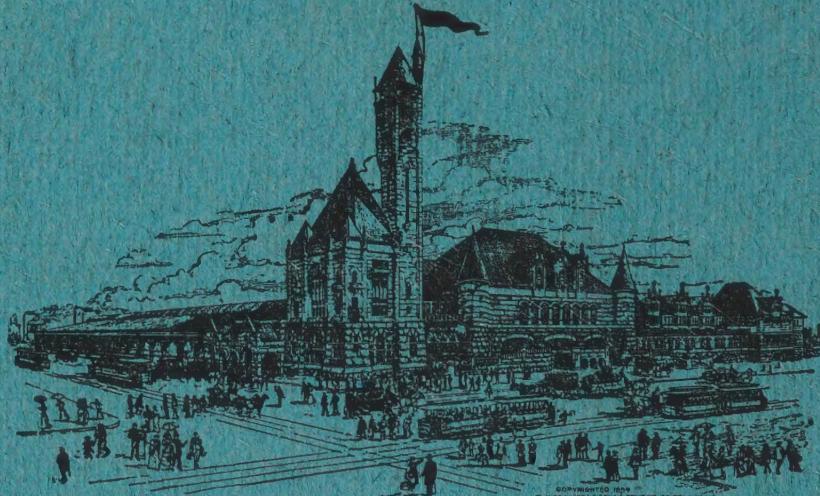
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